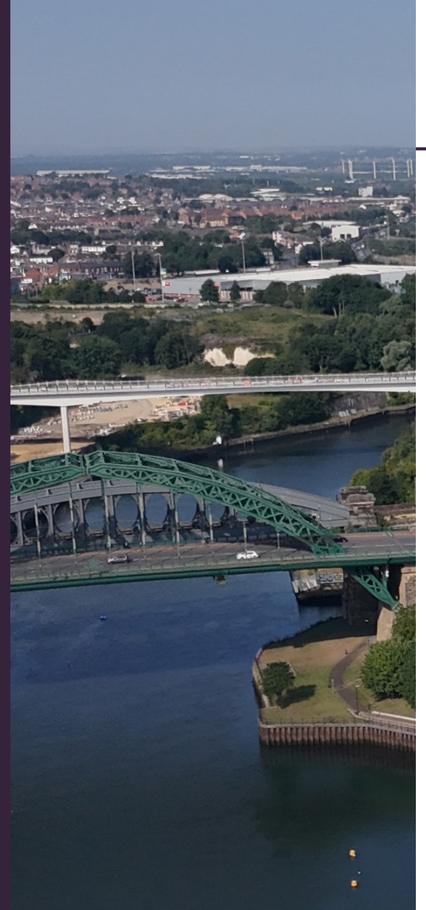
# SUNDERLAND SMART CITY:
## IMPACT REPORT

PUBLIC FIRST

# CONTENTS



# FOREWORD

Sunderland has always been a city shaped by resilience, creativity and a deep sense of community pride. It is a place that lifts people up, even in challenging times, and looks ahead with determination. For anyone who calls this city home, it is impossible not to see how profoundly technology now influences our daily lives — and how it can either deepen inequalities or open doors to opportunity. Our responsibility is to make sure it always does the latter.

Digital inclusion is no longer a 'nice to have'. It is a basic requirement for taking part in modern life. Whether it's accessing employment, healthcare or staying connected with the people who matter most, the ability to get online safely and confidently shapes the choices people can make and the chances available to them. I was delighted to be appointed Chair of the Government's Digital Inclusion Action Committee in 2025, and we are hard at work tackling this basic requirement, and ensuring no person and no place is left behind in the digital age.

This report highlights just how far Sunderland has come.

From transforming broadband access across the city, to supporting thousands through Digital Health Hubs, to pioneering assistive technologies that help older and vulnerable residents live more safely and independently — Sunderland is demonstrating what an inclusive digital future can truly look like.

Sunderland's leadership in data-driven public services, smart infrastructure and fast-growing sectors such as esports demonstrates how digital innovation can strengthen the local economy while improving everyday life for residents. And crucially, none of this progress has happened in isolation. It has been built through genuine partnership between the Council, community organisations, volunteers, national institutions and leading technology companies.

What the city has achieved offers important lessons – and a model - for other places. The city's approach shows that digital inclusion succeeds when it is rooted in local insight, strong civic leadership and genuine collaboration across sectors. By focusing on people as much as technology — building skills, confidence and community partnerships alongside infrastructure — Sunderland has created a model that can be adapted and scaled elsewhere. Towns and cities across the country can draw on this experience to accelerate their own progress, ensuring that digital transformation delivers real, tangible benefits for every resident.

There is, of course, more to do. Ensuring everyone can afford connectivity, access devices and build the confidence to use digital tools will remain at the heart of this mission. But the foundations laid here are strong, and the ambition of this city is unmistakable.

Sunderland has shown what is possible when inclusion is placed at the centre of digital transformation. It is leading the way in demonstrating how technology can serve people and communities — not the other way around.

I am deeply proud of my city, of the progress reflected in this report, and of the shared determination to build a fairer, more connected digital future for all.

Baroness Armstrong

Chair, Digital Inclusion Action Committee

# EXECUTIVE SUMMARY

This Public First report examines the economic and social impact of Sunderland's journey towards becoming the UK's smartest city. Working with partners including Boldyn Networks, CityFibre and Microsoft, the City Council has dramatically changed the city's digital landscape over a short space of time: Broadband connectivity blackspots have almost been eliminated, increasing numbers of tech businesses are forming and use of internet of things (IoT) technologies and big data infrastructure are making public services both more effective and efficient.

# Key findings

## Reforming public services

**Sunderland now has over 6,900 people on its adult social care caseload with assistive technology solutions in their homes**, reducing costs and enabling residents to live safely at home for longer. Examples of assistive technologies being rolled out include Amazon Alexa smart speakers, smart lightbulbs and heating, home sensors and GPS trackers.

**Using aggregated financial, health and community data, more than 670 additional pupils were identified for Free School Meals through aggregated data, delivering around £1.1 million in support to schools and local families through the pupil premium, family meal savings and Holiday Activities and Food (HAF) benefits**. In addition, half a million pounds worth of benefits have been realised through the Southwick Altogether Raising Aspirations (SARA) partnership, which uses cross-agency data sharing to maximise impact.

**IoT solutions used by the council are already saving the equivalent of over 80 staff working days per year** and reducing paper usage by at least 26,000 sheets annually.

**IoT sensors on lifebuoys are estimated to reduce the time lifebuoys are missing from their holders by over 80% on average**, ensuring that potentially life-saving equipment is there when it's needed. A lifebuoy can now be detected and replaced in as little as 30 minutes compared with the previous maximum wait of seven days.

**Mould and damp sensors in local authority housing,** which could be rolled out across the entire social housing stock in Sunderland, **are estimated to reduce the risk of asthma by up to 9%.**

**6,900**
people on adult social care caseload with assistive technology solutions

**670**
additional pupils identified for Free School Meals

**80**
staff working days per year saved

**80%**
estimated reduction in the time lifebuoys are missing from their holders

**9%**
estimated reduction to the risk of asthma

**£170,000 p/a**
saved by the NHS

**2,700**
hours per year engaging in active play

**250**
more crimes solved in Sunderland

## Connected solutions for a healthier and safer city

**Assisted technologies have the potential to reduce the number of falls requiring hospital admissions in Sunderland by about 50 per year, saving the NHS over £170,000 per annum.**

**Interactive play equipment is helping young people to stay active.** We estimate the Sonar Arch accounts for almost 20% of total play time at Seaburn play park, while the Football Wall accounts for 6% at Thompson Park. Combined, **over 2,700 hours per year are spent engaging in active play with this interactive equipment.**

**AI-enhanced cameras could lead to about 250 more crimes solved in Sunderland every year and six fewer suicides in the city.**

## An end to digital exclusion

**The number of homes in broadband connectivity blackspots has declined by over 80% since 2020 - amounting to about 35,000 households in Sunderland.**

**Over 1,500 mobile SIM cards with data have been issued to individuals in Sunderland** through a partnership with the Good Things Foundation.

**The city's Digital Health Hubs programme has the potential to generate over £8 million worth of social benefits from enhancing digital skills.**

**80%**
decline in broadband connectivity blackspots

**1,500**
mobile sim cards with data issued

**£8 million**
worth of social benefits from enhancing digital skills

**£70 million**
of productivty gains estimated per year

**270**
total number of technology businesses, more than doubling since 2018

**300**
individuals received support through council-sponsored programmes

**2%**
increase in city centre store sales from support of free Wi-Fi

**£2.3 million**
per year boost in stadium sales

**£1.8 million**
added to GVA by esports

## A city that's supporting tech entrepreneurship and using technology to enhance the economy

Over the past five years, **the number of businesses in the city with full-fibre or gigabit broadband access has increased from almost none to close to 3,800 firms, creating an estimated £70 million of productivity gains per year.**

**The total number of technology businesses in Sunderland has more than doubled from 108 in 2018 to just over 270 in 2025.**

**300 individuals have received support through council-sponsored programmes to encourage more tech startups,** with more than 150 startup ideas generated and 28 new business registrations.

Through increasing dwell time in the city centre, and with over 60,000 unique users (about a fifth of Sunderland's population), **free Wi-Fi has supported an estimated 2% increase in city centre store sales.**

**The 'Sunderland Open Network EcosysTem' (SONET) Project, which greatly enhances the mobile connectivity within the Stadium of Light, which can boost stadium sales by up to £2.3 million a year.**

**The fast-growing esports sector will add over £1.8 million in economic gross value added (GVA) per year in Sunderland by 2030.**

# INTRODUCTION

## THE JOURNEY TO BECOMING THE UK'S SMARTEST CITY

The city of Sunderland has been on a significant journey of digital transformation. Starting in 2018 with the appointment of a new – and digitally-focused - Chief Executive Officer for the Council, and a digitally-oriented City Plan in 2019, the city has transformed from widespread connectivity blackspots into a globally-recognised smart city. **Sunderland was recently shortlisted as one of the top three global finalists in the World Smart City Awards 2025** in the Enabling Technologies category, demonstrating this progress.

In this Public First report, we evaluate the impact of smart city initiatives across Sunderland to date, both in terms of economic and social outcomes. Our analysis shows a city that has experienced dramatic progress over a short space of time: **average broadband speeds have increased sixfold, assistive technology is being widely used to support households, and the City Council has almost eliminated digital exclusion within its own workforce.**"

**Since 2020, close to £110 million of external funding has been brought into the city as a result of smart initiatives.**

# THE JOURNEY SO FAR

## 2019

**April 2019**
Stakeholder engagement carried out to shape the development of the Smart City vision and strategy

## 2020

**February 2020**
Sunderland publishes its 10-year digital strategy alongside the announcement of two major investments in intelligent traffic mapping

**March 2020**
Sunderland becomes the first in the UK to pilot a new smart healthcare app

**July 2020**
Free, superfast Wi-Fi service launched from Roker to Seaburn

**August 2020**
£2.4m funding secured to deliver 5G-enabled Connected Automated Logistics (CAL) pilot and, proof-of concept, providing last mile delivery supporting the advanced manufacturing sector

**October 2020**
Sunderland named as the UK's Smart City of the Year in the Digital Leaders DL100 list

## 2021

**January 2021**
£62m investment across the city as part of CityFibre's plans to upgrade Sunderland's broadband connectivity

**June 2021**
Sunderland's Chief Executive, Patrick Melia OBE joins the UK5G Advisory Board, a national network of experts promoting research, collaboration and application of 5G in the UK

**September 2021**
Sunderland awarded Digital Council of the Year at the Connected Britain Awards

**October 2021**
The announcement of Sunderland City Council's 20 year strategic joint venture with Boldyn Networks to fast track Sunderland to becoming one of the UK's most advanced Smart Cities

**November 2021**
Only UK finalist at the World Smart City Awards at the Smart City Expo World Congress event in Barcelona

## 2022

**January 2022**
£62m investment across the city as part of CityFibre's plans to upgrade Sunderland's broadband connectivity

**January 2022**
Terberg announced as a partner as the 5GCAL project moves forward. Terberg's HGV to be retrofitted with autonomous technology as part of the pilot

**June 2022**
Connected Automated Logistics (5GCAL) pilot. Proving the delivery of zero emission, automated, last mile delivery

**July 2022**
Boldyn Networks, Sunderland City Council and the University of Sunderland partner to develop one of the UK's first 5G universities with public access Wi-Fi on campus, and across the city centre

**November 2022**
Chief Executive, Patrick Melia OBE takes to the stage at the Smart City World Congress to share Sunderland's Smart City journey and 20-year strategic partnership with Boldyn Networks

**December 2022**
Sunderland's first IoT accelerator project sees 10 start-ups awarded up to £100k, with over half planning to make Sunderland their home for business

## 2023

**February 2023**
The Sunderland Advanced Mobility Shuttle (SAMS) is awarded £3m to trial self-driving, zero emission passenger transport, connecting key parts of the city

**March 2023**
The council's three-year Digital Inclusion Plan is launched, ensuring no one and nowhere is left behind - delivered by the Go Online (GO) Sunderland Network

**April 2023**
Huge expansion of free public Wi-Fi in Sunderland with an extra 1.5sq kms, denser and more reliable coverage

**May 2023**
A digital platform dedicated to digital inclusion is established to help residents and partners access support and easily access information and solutions for getting online

**June 2023**
30,000 residents contacted in the city eligible for discounted broadband packages, with a goal to save the city £5.8m in unclaimed entitlements

**July 2023**
Nine projects in Sunderland receive more than £3.3m in funding, including investment in digital health hubs across local communities

**September 2023**
Sunderland's partnership with Microsoft sees the launch of 'Creating Culture House in Minecraft,' a competition for local people to design the teen space within Culture House which is due to open its doors at the National Centre for Creative Smart Cities in 2026

**October 2023**
Sunderland selected as one of six global finalists for the City Award at the World Smart City Awards

**October 2023**
Sunderland hosts the Sensory Exhibition in partnership with the Royal Society of the Blind for Durham and Sunderland, inviting people with sensory impairments along to try technology that could help improve their everyday lives

**November 2023**
£3.7m secured from UK Government as part of the 5G Innovation Regions fund which will see four 5G and advanced wireless connectivity projects take shape across t he north east, with two in Sunderland

**December 2023**
Digital inclusion dashboards provide an overview of statistics, local intelligence, existing provisions, challenges, and opportunities to improve digital inclusion across the city's 35 wards

**December 2023**
Smart Home showhouse, co-designed with residents and health practitioners, demonstrated how everyday smart devices can help vulnerable residents live longer, more independent lives at home

## 2024

**January 2024**
22 Community Digital Health Hubs open across the city to tackle digital challenges with connectivity, devices and digital skills and enable more Sunderland residents to go online safely

**April 2024**
Plans unveiled for one of the UK's largest immersive screens to be installed in the city centre, as part of the 5G Innovation Regions project

**May 2024**
The Tech Hub opens in the heart of the city's business district in partnership with Smart Cities, Phoenix and Microsoft. The hub delivers events and sessions from first steps for getting online to innovative digital catapults

**July 2024**
Tech Mates volunteering scheme launched, supporting employees and residents to gain vital digital confidence and skills to participate in a modern digital world

**August 2024**
City-wide launch of the Donate Devices campaign. Funded by UK Government to collect unwanted devices to be redistributed to those who don't have access to digital technology

**August 2024**
The launch of the Sunderland App. A free-to-download resource to assist with wayfinding, planning and offering exclusive offers and discounts for residents, visitors and businesses

**September 2024**
Sunderland wins the Connected Britain Community Improvement Award for the far-reaching impact of the digital inclusion programme

**November 2024**
Sunderland takes to the main stage at the Smart City Expo World Congress to share insights into Sunderland's unique approach to digital innovation and urban transformation

**November 2024**
Sunderland is declared 'the UK's smartest city' in the Sunday Times' 'The future of cities: the 15 smartest innovations and trends'

## 2025

**January 2025**
OXA announced as the Sunderland Advanced Mobility Shuttle (SAMS) vehicle provider, signalling the start of a ground-breaking autonomous transport trial on a busy route connecting the city centre to the city hospital

**February 2025**
The launch of the Sunderland Expo Pavilion, funded by the Department of Science Innovation and Technology, bringing an immersive digital experience with real-time broadcasting capabilities to visitors in heart of the city centre

**March 2025**
Sunderland won the People's Choice Award at the Digital Leaders Impact Awards 2025, recognising its digital inclusion initiatives and commitment to using technology for social good while setting a benchmark for Smart Cities

**March 2025**
£286,000 secured from UK Government to develop a further 13 Community Digital Health Hubs across the city to tackle digital challenges with connectivity, devices and digital skills and enable more Sunderland residents to get online safely

**March 2025**
The North East won the Place-Based Impact award at the Future Networks Awards 2025 for the 5G Innovation Regions programme. Led by Sunderland City Council, the £3.7m initiative boosts wireless infrastructure, fostering economic growth, innovation, and cementing the region's digital leadership

**May 2025**
Regional 5G Innovation Projects Secure nearly £2m extra funding to build on the success of its transformative digital projects

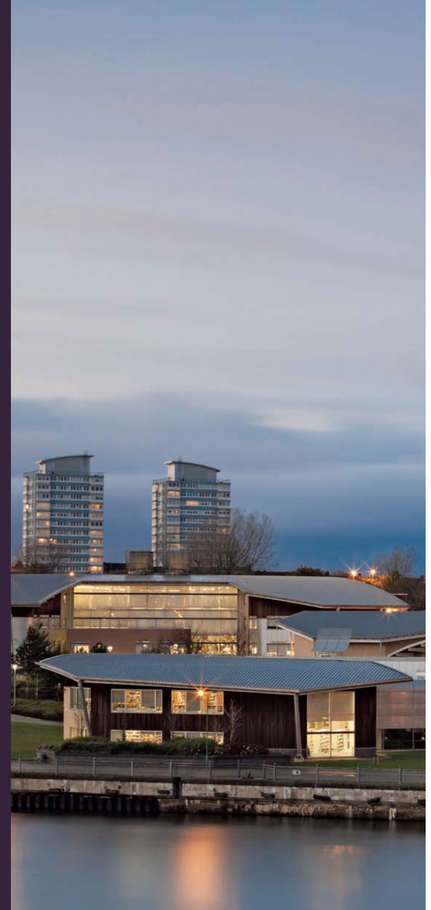
**July 2025**
Sunderland's Smart Playparks Top Global Leaderboard helping families get active, socialise and enjoy the outdoors

**August 2025**
Boldyn Networks and Virgin Media O2 power up 5G at Sunderland's Stadium of Light for next-gen fan experiences

**October 2025**
Smart City Symposium hosted in Sunderland to engage leading figures from government, industry, and academia in creating smarter, more sustainable cities

**November 2025**
Smart Cities parliamentary discussion in the House of Lords to bring together peers, parliamentarians, thought leaders, and industry innovators

**December 2025**
Impact study highlighting the economic and social outcomes of Sunderland's Smart City programme, to be released



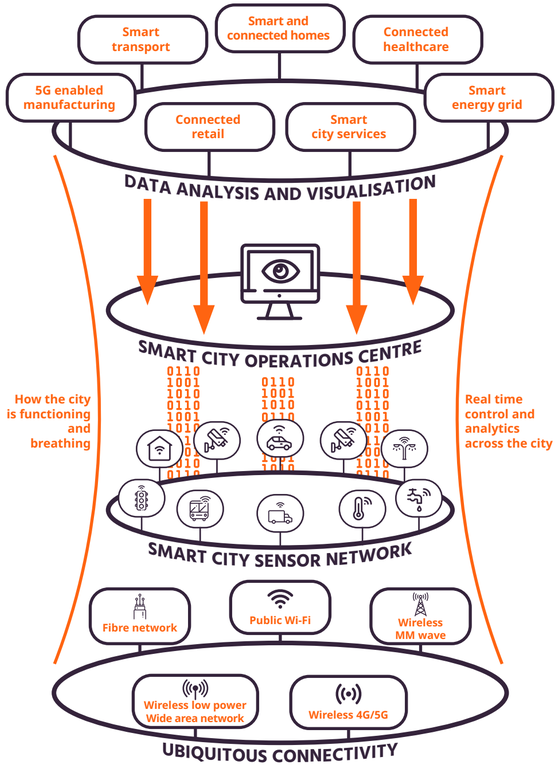
**Partnerships between the council and organisations such as Boldyn Networks, CityFibre and Microsoft have helped entrench technology in the city.** Through these partnerships, the city has ensured that connectivity, networks, devices and data analysis work together across the widest range of smart use cases.

Further, the council's integrated data platform - utilising Microsoft and OpenAI services - is not just creating efficiency gains but delivering new insights which are improving outcomes for Sunderland residents.

**An approach of experimentation with new concepts - such as the SAMS autonomous shuttle service trial - has created stepping stones**, providing the evidence and demonstration of capability needed to unlock additional sources of funding. As one interviewee put it, Sunderland has created a smart "petri dish" which opens up new opportunities and ensures long-term access to funding.

Our conversations with a range of stakeholders have highlighted the uniqueness of Sunderland's approach. Interviewees repeatedly noted the holistic nature of the council's approach to smart technologies, rather than the piecemeal and ad-hoc initiatives more commonplace elsewhere in the country. Another common theme was the value of the council's joint venture approach to smart investments, with partnerships creating a sustainable and long-term model for growth.

This report explores the progress made to date as well as the potential of future smart initiatives in Sunderland, such as the autonomous vehicle revolution. It also explores challenges to accelerating Sunderland's economic potential, such as access-to-capital constraints on tech startups wishing to expand and take on more employees.




# UBIQUITOUS CONNECTIVITY

## (A NETWORK OF NETWORKS)

## CityFibre's investment in multigigabit broadband in Sunderland

In 2022, CityFibre – a wholesale provider of broadband connectivity – committed to investing over £60 million in transforming Sunderland from a city with limited broadband connectivity to a leading city.

46,000 properties are now ready for CityFibre services in the city, with broadband speeds of up to 5.5 gigabits per second.

Critically, connectivity is being complemented with residents in Sunderland actually signing up, with fibre broadband take-up in the city above the national average.

Take-up is being supported by significant consumer choice of internet service providers (ISP). As a wholesaler, CityFibre works with 30 ISP partners, creating an environment of competition in terms of both price and customer service.

CityFibre has also been working with Sunderland City Council to create a public sector network in the city, connecting up IT infrastructure across the local authority estate.

> **"Sunderland is punching well above its weight when you look at its city peers ... there are all sorts of Internet of Things devices it can now utilise as a result of investments in connectivity."**

Paul Wakefield

Senior Partnership Manager, CityFibre



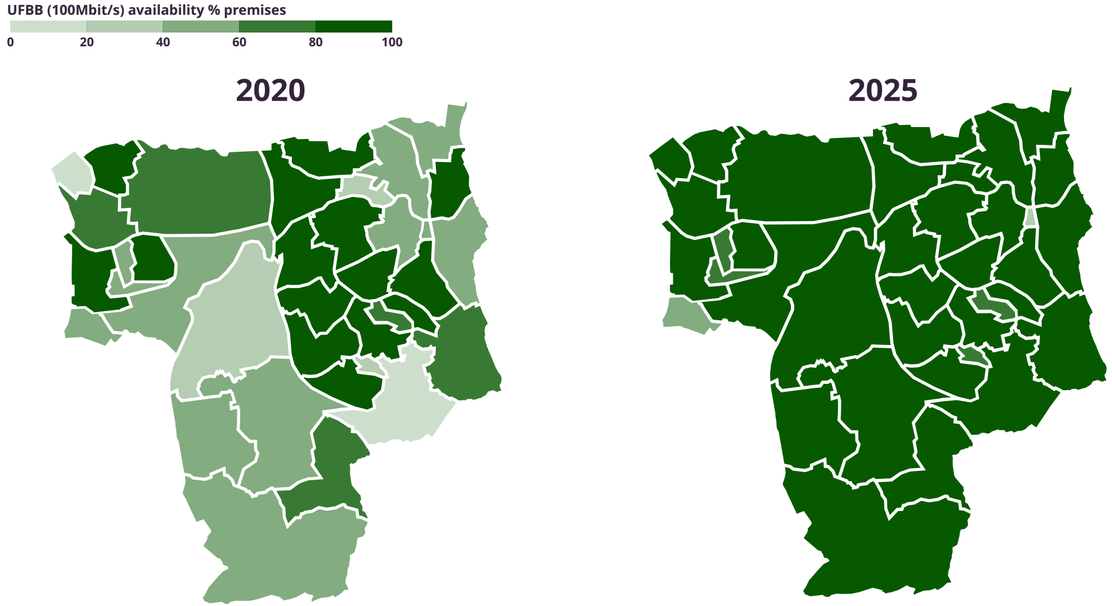
## The foundation of broadband connectivity

**Connectivity—fast, reliable, affordable internet access—is foundational to a smart city vision.** Sunderland has therefore made investment in infrastructure a priority, going from a city with very limited full-fibre or gigabit connectivity to one in which the majority of the city now has access.

**Pivotal to achieving this was CityFibre making a £62 million investment to roll out a full-fibre network covering "nearly every home and business" in the city.** The number of businesses with full-fibre or gigabit connectivity has increased from almost none five years ago to about 3,800.

Separate analysis Public First has undertaken of household data suggests **the number of homes in connectivity blackspots has declined by over 80% since 2020 - amounting to about 35,000 households in Sunderland.**

**Proportion of homes with access to ultra-fast broadband**




Broadband Connectivity across the city now reports as follows:

- Properties with Full Fibre broadband – 83% (up from just 0.20% in 2019)
- Properties with Ultrafast broadband – 95.5%
- Properties with Superfast broadband– 99%

**“Sunderland was a good blueprint for investment. They have the right vision, it is strategically right from a people perspective. With a city like Sunderland, you can really see the human impact on investments.**

**We have created a petri dish in which smart innovations can be tested. This is a great opportunity for bringing more funding to Sunderland.”**

Daniel Kelly

Commercial Director, Boldyn Networks

## Working together for the long-term: Sunderland City Council & Boldyn Networks

**Central to the smart city success story in Sunderland is the combined vision of both the City Council and Boldyn Networks.** In 2019, the council had a clear view of its ambitions but recognised the need for a private sector partner to bring their expertise and capacity for investment to make those ambitions a reality. A 20-year strategic joint venture partnership with Boldyn Networks has been developed around shared interests and values and aligns both parties around a long-term vision of building a connected, intelligent city. Some of the results of this have included:

**Connecting via a network of networks**
LoRaWAN, Private 5G, public Wi-Fi and more latterly, additional fibre - that enables real-time sensing across the city and provides the underpinning infrastructure to deliver a raft of digital and data solutions.

**LoRaWAN**
A low power wireless wide area network, covering 153 sq. km of the city, collecting data from a wide range of sensors.

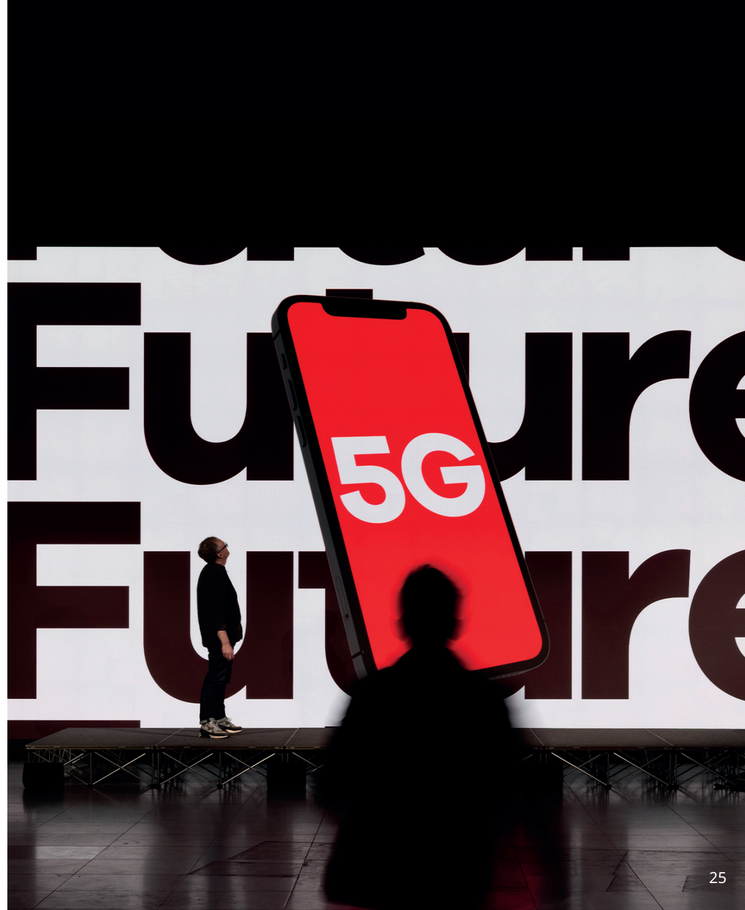
**Public Wi-Fi**
An outdoor public Wi-Fi network providing free internet access across the city centre, the coast, within city parks and across 37 community venues to date, supporting 300,000+ individual connections every month.

**Private 5G**
Fuelling city-wide innovation as the fifth generation of mobile internet connectivity.

Majority owned by The Canada Pension Plan Investment Board (CPP Investments), Boldyn focuses on investments with long-term benefits, leading to a well-aligned partnership with a council that wants to drive digital transformation for decades to come. And Sunderland, with its holistic approach to becoming a smart city, fitted well with Boldyn’s requirements for a partner.

The long-term time horizon of the partnership allows for continuity in investment, planning, and implementation of smart projects, giving confidence to both public and private stakeholders. It has turned investments and innovations into revenue-raising opportunities for the city - for example through the sale of digital and data IoT solutions that have been piloted in Sunderland.

Boldyn brings advanced technical know-how in network deployment, sensor integration, data platforms, and long-range connectivity. The council benefits from Boldyn’s experience, while Boldyn gains a trusted partner and real-world testbed for smart city innovation.



## Transformative digital services

Enabled by the "network of networks", Sunderland is maximising the benefits of infrastructure for residents, business and partners, rolling out a number of digital and data solutions across the city including:

- **Internet of things (IoT) solutions** to increase productivity of public services, increase safety, reduce emissions and enable evidence-based decision-making covering: air quality, traffic and pedestrian movement, waste management, winter gritting, mould and damp, lifebuoy safety, legionella, energy efficiency, and rainfall and flood management
- **Assistive technologies** helping to keep vulnerable people safe and well
- **Autonomous mobility solutions** within both logistics and passenger transport
- **Creative arts powered by 5G**, enabling 360-degree broadcasts, real-time art transmissions, and immersive interactive experiences
- **Public safety with 5G enabled cameras** and advanced video analytics
- **Asset management and compliance** to maintain and regulate city assets
- **Smart play equipment** helping young people stay active
- **A City App** that's a one stop shop for anyone that lives, works and plays in the city

These solutions are delivering a transformative impact on public sector delivery and residents.



# PUBLIC SECTOR REFORM

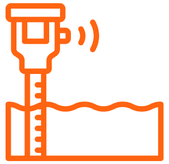
We estimate that, together, IoT solutions are already saving the equivalent of over 80 working days per year and reducing paper usage by at least 26,000 sheets annually. These solutions include:

**Sensors within lifebuoy holders to detect if a lifebuoy is removed** - enabling more rapid response where removal presents a public safety risk. **We estimate that this solution can reduce the time the average lifebuoy is missing from its holder by over 80%**, ensuring that potentially life-saving equipment is there when it is needed. A lifebuoy can now be detected and replaced in as little as 30 minutes compared with the previous maximum wait of seven days.

Sunderland City Council's ambition is to have these sensors in even more lifebuoy holders along the Wear over time.

**Water-level sensors on trash screens and gullies** - providing earlier warning of potential flooding, more targeted and efficient cleaning cycles, reduced manual inspection frequency and better resource allocation.

Flood early warning systems can help to reduce flood damage. If these sensors were rolled out across the city, **we estimate that over £95,000 of surface water flood damage to residential properties could be avoided each year.**





**Using smart devices to monitor water temperature in high-risk locations to manage legionella risk.** IoT sensors continuously record water temperatures and transmit data to the smart platform. This reduces the frequency of physical inspections, improves regulatory compliance, and allows quicker reaction to temperature anomalies.

The time savings from these sensors add up - **if this solution were to be implemented across all monitored sites in Sunderland we estimate the value of the time saved would be over £170,000 per year.**

**Damp and mould sensors in local authority housing**, including using window sensors to identify if tenants are suitably ventilating their homes. Following the success of the pilot scheme, Sunderland City Council plans to roll these sensors out across its housing estate.

Mould and damp can have serious health implications. Public First estimates that this solution **could reduce the risk of asthma in Sunderland's social housing by up to 9%.**

**Replacing manual paper-based inspections of playpark equipment with digital checks** in which council officers can complete the check with a device, after which the data is automatically uploaded to a Microsoft Power BI digital dashboard.

**The new process has drastically reduced paper usage (around 15,000 pieces of paper)**, eliminated the need to manually upload data, and improved transparency and compliance. **We estimate that compared to a paper-based approach when inspecting all 801 pieces of playpark equipment, the new process saves over 180 hours of staff time a year.**

**Replacing manual paper-based inspections of water safety equipment from paper-based to digital checks across 50 sites**, ensuring a robust document inspection process while also reducing inspection completion, review, and write-up time by over 140 hours a year.

**Creating a Power App for winter maintenance duty officers** that combines previous forms on vehicle pre-check, treatment and route information, and weather and road condition data, speeding up the process and allowing duty officers to start gritting icy roads even faster. **We estimate the time saved from streamlining this process is worth over £3,800 a year.**

The previous examples also contribute to the council's net zero ambitions, often removing the need to visit sites, alongside the following examples using technology to reach net zero:

**Deploying sensors in Sunderland City Council's largest non-domestic buildings to gain detailed insight into energy consumption, indoor environmental quality, and emissions**. IoT sensors, connected via the LoRaWAN network, now report on energy usage, environmental variables, and building performance. Buildings such as the Evolve and Leechmere Centres reported on efficiency improvements, enabling short-, medium-, and long-term recommendations to reduce energy use. The pilot already **achieved 111 tonnes $CO_2e$ of savings from early changes, with the potential to achieve a further 76 tonnes $CO_2e$ from recommended longer-term measures.**

**The Sunderland Open Network EcosysTem (SONET), which provides fast 5G connectivity in the Stadium of Light, is also demonstrating efficiency gains,** with the OpenRAN technology used to create an end-to-end digital network. This removes radios, amplifiers, heat-emitting attenuators, and air conditioning - **reducing electricity consumption by as much as three quarters.**

# SUPPORTING HEALTHIER AND SAFER COMMUNITIES

Sunderland has been building a reputation as one of the UK's most proactive smart cities, not least through its ability to weave smart technologies into services and places that matter for health and safety: homes, neighbourhoods, parks and travel corridors.

## Assistive technologies in Sunderland homes: keeping people safe, independent and connected

Sunderland's approach to assistive technology provides a range of benefits to younger and older households that stand to benefit from additional support. The city runs dedicated teams and services — including an Assistive Technology Team, a Telecare service supporting thousands of residents, and a "Smart House" demonstration facility — which together promote the use of home sensors, voice assistants, telecare alarms and basic smart home integrations **to support independence for older people and people with long-term conditions.**

**Sunderland now has 6,900+ people on its adult social care caseload with some kind of assistive technology solution in their homes.** This largely consists of older households but also a meaningful number of children, or younger adults with care needs. **Examples of assistive technologies being rolled out include Amazon Alexa smart speakers, smart lightbulbs and heating, as well as home sensors and GPS trackers.**



### Benefits of assistive technology in the home

**Risk reduction and early intervention**

Movement sensors, fall detectors and medication reminders reduce immediate safety risks in the home and give carers and professionals earlier warning of deterioration.

**Independence and wellbeing**

Technologies such as simple voice assistants and automated home controls can lower barriers to everyday tasks and thereby reduce frustration and loneliness.

**System efficiency**

When remote monitoring is embedded into community care pathways, staff resources can be better targeted.

**Carer wellbeing**

Assistive technology provides much-needed support and reassurance for carers.

**"When we start looking at assistive technology it's about empowering families to support their own or for people to support themselves and rely less on services."**

*Female, Carer*

**"Along with the technologies comes connectivity … where people can speak to their families via online video calls, which in the past has probably been a thing that not many people did, and a lot of people do now. So it prevents a little bit more loneliness."**

*Male, Carer*

**"The equipment is safe to use and it is reliable. That's the key takeaway."**

*Male, Carer*

## Case Study: Laura* and her family

To assess the impact of assistive technology, one of the people we spoke to was Laura, alongside her mum. Laura is a young woman with neurodivergent needs and communication difficulties. These combined challenges make independent living difficult, particularly in self-soothing and managing daily routines, meaning her mum and dad are full-time carers.

Before assistive technology was introduced, her mum described their routines as “really exhausting”. She explained, “[Laura] used to not be able to self-soothe, so to sleep, she would need me or Dad there to help her.” Evenings stretched late into the night, disrupting family structure and leaving little space for rest. “We never had time to watch anything we wanted to watch, because it might have been too adult for Laura.”

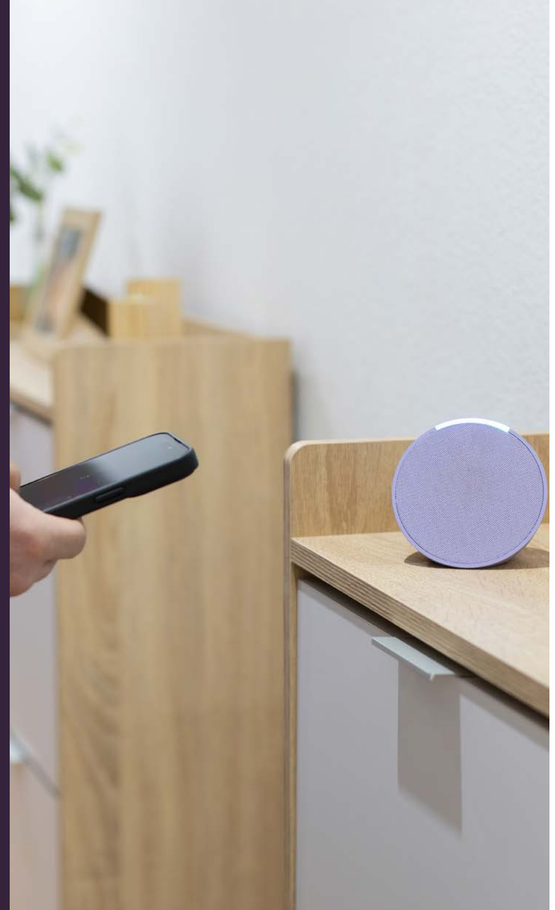
When their occupational therapist suggested trying assistive technology, expectations were cautiously optimistic. “[The therapist said] I don’t know if technology can help in this circumstance, but I know it can do really wonderful things.” The family, however, were eager. “We jumped on the bandwagon,” her mum recalled, “because at that point, you really do want to try everything to support them.” There was some initial apprehension – “the fear of is this going to take a while to work? And will it work?” – but it “disappeared quite quickly” with the council team’s guidance. “They were very enthusiastic, which made it really easy to get on board…and then it went on to grow.”

The difference was felt most in establishing sleeping and waking routines. In the past, Laura’s neurodivergence contributed to disturbed sleep. However, with the introduction of assistive technology her night routine became calmer and more predictable. Laura could independently adjust her lighting, close her blinds, and play soothing music through voice commands – small actions that helped her settle and sleep with more ease.

Her parents spoke with joy and relief at seeing Laura engage more actively in her routines and interests. From choosing her favourite songs to managing the lights and television in her room, she could now shape her mornings and evenings in ways that reflected her own preferences. Her mum reflected, “I can’t express how much it changed for us. Within two weeks, we all of a sudden had a child that was controlling [her] own bedtime and going to sleep, and we’ve never looked back since then.”

**Names have been anonymised.*





**The health gains from assistive technologies could be substantial**. Falls, for example, are the leading cause of accidental deaths among those over the age of 75. There are about a quarter of a million emergency hospital admissions in England each year due to falls among the over 65s, with each admission costing the NHS about £3,500.

A review of evidence on smart technologies suggests that their use could lead to fall risks that are 58% of the level of those not using such technologies - i.e. a circa 40% reduction in risk. With the majority of assisted technology households in Sunderland older households, we estimate that **assistive technologies have the potential to reduce the number of falls requiring hospital admissions in Sunderland by about 50 incidents per year, saving the NHS over £170,000 per annum**.

**AI is being used to enhance social care provision in Sunderland**, with the technology used to improve analysis of structured assessment data and unstructured free-text case notes. This is then used to inform demand forecasting, identify concerns and enhance predictive analytics, such as through identifying patterns that lead to an escalation of care needs.

## Interactive equipment: rethinking active play

Sunderland's investment in smart play parks showcases how interactive public infrastructure can be designed with health outcomes in mind. **The city has installed Yalp interactive systems such as the Sutu Football Wall at Thompson Park. Seaburn Park features the Yalp Sona Arch, a movement-based play system that uses music and motion sensors to spark inclusive games**, plus encourage movement, social interaction and spontaneous fun for all ages and abilities.

**These installations combine motion-sensing games, audio guidance and connectivity to create enticing, inclusive opportunities for physical activity that are especially effective at engaging children and young people** - and, crucially, they generate data about use and engagement that helps the council optimise provision. The interactive equipment in Sunderland is among the most-played of its kind anywhere in the world.

Our estimates **suggest that the Sonar Arch accounts for almost 20% of the total play time at Seaburn play park**, while the Football Wall accounts for 6% of total play time at Thompson Park. Combined, **over 2,700 hours per year are spent engaging in active play with this interactive equipment**.

## Encouraging active travel

Encouraging residents to shift one or two journeys a week from car to foot, bike or public transport can deliver outsized public health dividends: lower air pollution, more incidental physical activity, and reduced traffic accidents. **Sunderland has embraced behaviour-change apps such as BetterPoints as a mechanism to nudge residents toward active and sustainable travel**. The council's BetterPoints Sunderland programme tracks walking, cycling and public transport trips via smartphone GPS and rewards users with points redeemable in local shops, helping align individual incentives with public health and climate goals.

**Emerging evidence on such travel apps is encouraging**. An academic study published in September 2025 found that **mobile app rewards increased the likelihood of switching from cars to sustainable modes of travel by over 15%.**[1]

Further, Sunderland City Council's partnership with VivaCity uses sensors along the road network to anonymously capture, classify, count and store transport usage data. This has provided the council with highly accurate insights into active travel, whether it's the number of pedestrians walking towards the Stadium of Light on matchday or the number of cyclists on the new cycle path on Dame Dorothy Street. **The creation of the cycle route on the A138 has led to an 84% increase in the average number of cycle journeys made along the road in summer**.

1 Do reward-based incentives via smartphones encourage modal shift to sustainable modes? - ScienceDirect

## Safer streets and preventing suicide through AI cameras

**Connected cameras which utilise artificial intelligence have already started to be rolled out across Sunderland, with 37 cameras currently in place, helping create a safer city compared with traditional closed circuit television (CCTV) security systems.** Often CCTV fails to solve crimes because material is not available, image quality is poor or the wrong recordings have been requested by police. Sometimes vital evidence is accidentally overwritten.

AI cameras can address these issues - for example, through preventing overwriting of crucial material, enhancing low-quality images or using the predictive power of data to help solve crimes. We estimate that there is **potential to increase the number of solved crimes in Sunderland by about 250 per year**.

Beyond preventing and solving crimes, AI cameras also have the potential to prevent the tragedy that is suicide: a significant problem in Sunderland, where there has been an average of 32 suicides per year over the past decade. The per capita suicide rate in Sunderland is 31% higher than the England average.

Sunderland City Council already utilises AI technology as part of its Video Management System to create a "virtual tripwire" on some cameras. This imaginary line in the image acts as a sensor, and if a person crosses it the system will trigger an alert. This use of AI-enhanced, connected cameras in Sunderland could ensure 24 hour monitoring of suicide hotspots and help prevent future suicides, detecting vulnerable individuals and allowing more rapid response before a suicide event occurs - with one study suggesting a 60% effectiveness rate in reducing suicides. **If just half of suicide hotspots were covered by such cameras, our modelling suggests suicide numbers could be reduced by three per year, while coverage across all hotspots could lead to six fewer suicides.**

# HARNESSING DATA

Sitting alongside increasing use of connected devices in Sunderland is a data lake and data reporting infrastructure allowing the City Council to garner new insights through data analysis. The Smart City Data Platform leverages Microsoft cloud-based technology, including Microsoft Fabric, Azure Data Services, and OpenAI Cognitive Services to ingest, store, process, analyse and visualise structured and unstructured data from a wide range of data sources.

Use of Microsoft Power Apps allows quicker and more accurate reporting of developments and data analysis helps to improve planning in the city. Examples include:

**City Planning and Events Dashboards** – integrating real-time data on footfall, spend and travel patterns to help Sunderland Business Improvement District and partners shape safer, more vibrant city experiences and events

**Environmental Hotspot Mapping** – visualising data on waste, air quality and fly-tipping to identify problem areas and plan targeted interventions

**Strengthening Communities Insights** – combining demographic, economic and community data to help the council and partners better understand residents' needs and direct support where it has the greatest impact

**Digital Exclusion Modelling** – analysing broadband usage and socio-economic indicators to identify households at risk of digital exclusion, guiding the rollout of Digital Health Hubs, device donation schemes and social broadband campaigns

**Social Care Data Integration** – using anonymised assessment and case data to forecast demand, identify repeat contacts and apply AI to detect trends and improve care outcomes

**Multi-Agency Working** – aggregation of council and partner data to support communities and improve neighbourhoods

**Open Data Hub** – publishing accurate sources of data for visitors and businesses



Sunderland's commitment to data-driven inclusion is already creating measurable social impact.

Using aggregated financial, health and community data, the city has been able to:

**Identify more than 670 additional pupils eligible for Free School Meals**, delivering around £1.1 million in support to schools and local families through the pupil premium, family meal savings and HAF benefits

**Reach over 60,000 residents with targeted digital inclusion campaigns** over the last 2 years

**Support more than 10,000 people via 37 Digital Health Hubs located across the city** – improving access to online health services and essential skills

**"Sunderland City Council is demonstrating what's possible when technology is applied with purpose ... the council is unlocking insights that help deliver better services and improve outcomes for residents across the city."**

Zephaniah Chukwudum

Director, Local & Devolved Government & Transport, Microsoft UK

**Further, half a million pounds worth of benefits have been realised through the SARA partnership, which is using cross-agency data sharing to maximise impact and reduce antisocial behaviour.**

**Having access to a greater amount of data - and clearer insights from this data - also supports the council in making funding applications**, providing additional justifications and context for grant applications. For example, VivaCity transport sensor data has not just provided invaluable insight for road network planning and project evaluation, but helped Sunderland City Council **secure over £8m in Active Travel Funding** for schemes to promote healthier modes of travel such as walking and cycling.

Another application of data-driven insights that came up in our discussions was being able to use information on footfall and pedestrian behaviour to advise businesses looking to rent or purchase vacant units in the city centre.

**Artificial intelligence (AI) is enhancing the increased use of data tools across the City Council.** OpenAI Cognitive Services are being used to read and analyse hundreds of verbatim comments in resident surveys in seconds - rather than hours if done manually, providing rapid assessment of key themes, sentiments and insights to inform decision-making.

**SimAnalytica: using data to inform transport policy**

In 2024, Sunderland City Council partnered with SimAnalytica, a UK-based decision intelligence software company that uses advanced data science, AI, and geospatial data to help organisations make better choices for climate action, decarbonisation, and building resilience, offering applications for energy, transport, and carbon management through its Compass:Engine platform.

With the council aiming to make the city carbon neutral by 2040, it wanted to better understand changes in traffic and emissions by implementing various measures such as narrowing carriageways or making them pedestrianised. SimAnalytica's simulation investigated the impact of various interventions at different peak timeframes, with data from the council's own sensors to simulate traffic. The interventions could then be compared against a baseline 'do nothing' scenario.

For St. Mary's Boulevard - a busy dual carriageway in the city centre - the simulation investigated the impact of interventions at different peak and inter-peak timeframes, with data from the city's VivaCity sensors playing a crucial role in simulating traffic. This data is captured within the council's Smart City Data Platform, supplied by its Smart City Partner - Boldyn Networks - which in turn fed into SimAnalytica's modelling software.

The "digital twin" proof of concept enabled the council to identify emerging challenges and areas that demanded immediate attention. Additionally, it provided an opportunity to showcase the art of the possible to key stakeholders, ensuring that the council is better positioned to engage with residents, businesses, and regional leaders to drive positive change.

**Southwick Altogether Raising Aspirations (SARA)**

Southwick Altogether Raising Aspirations (SARA) is a partnership that offers help to the community to access support and gives people in the Southwick ward a say about what the priorities should be for the area.

Visualisations incorporating council, police and fire service data are being used to inform real time actions and track the impact of interventions in the SARA area. Data sharing across the multi-agency hub has already delivered significant efficiencies and improvements, including allowing teams to respond more quickly to incidents and using data insights to reduce crime and antisocial behaviour.

It is estimated that this data-focused partnership has generated over half a million pounds worth of positive impact, including benefits of faster response, reduced anti-social behaviour and improvements in physical health and fitness.

# AN END TO DIGITAL EXCLUSION

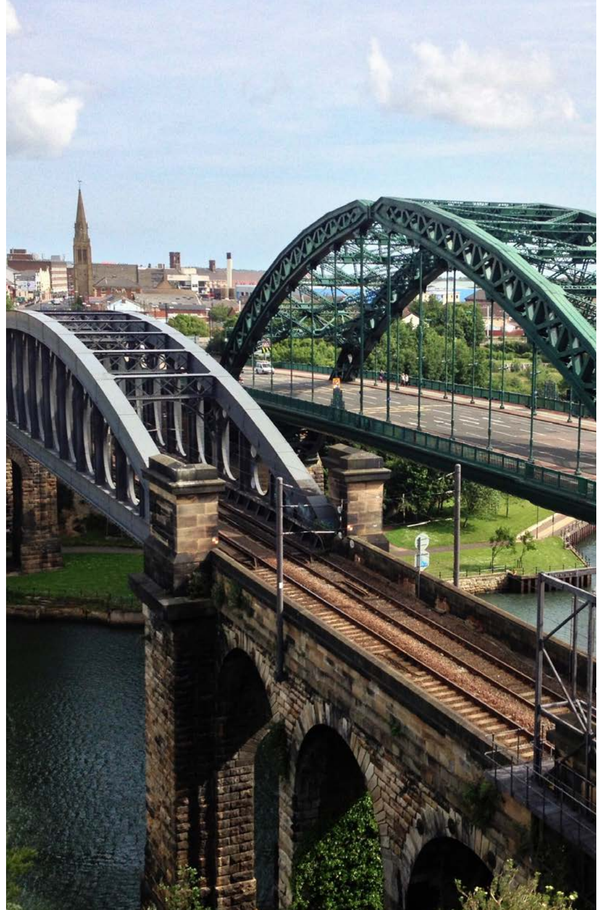
The city of Sunderland is taking a comprehensive and multi-layered approach to digital inclusion as part of a wider 'stronger communities' approach — recognising that access to infrastructure, affordable data and devices, digital skills and an inclusive culture are each necessary if no one is to be left behind in the digital age.

**The benefits of increasing digital inclusion**

Digital exclusion is widely acknowledged as a significant social and economic problem. If individuals cannot get online - whether that be due to a lack of connectivity, affordability, skills or confidence - it increasingly hampers their ability to manage day-to-day life. Routine activities such as banking, booking a GP appointment, shopping or finding a job are now much more difficult for those that are not online. Sometimes, they are not just more inconvenient, but also more expensive: for example 'offline' consumers could pay 114% more for a SIM-only phone contract, and 29% more for train tickets.

Given the wide range of channels through which digital exclusion makes life harder, it is unsurprising that the return on investment in measures that promote digital inclusion is substantial. A report produced by the Centre for Economics and Business Research for the Good Things Foundation found that every £1 invested in digital skills training generates £9.48 of economic and social benefits. This includes benefits such as time savings for individuals from getting online, savings to the NHS and government departments and gains from higher rates of employment as a result of digital upskilling.





## Databanks providing SIM cards for those who cannot afford data

**While the substantial increase in ultra-fast broadband availability in Sunderland is real and rapid progress, digital inclusion is not just about speed and availability: affordability of broadband and mobile data, and digital skills, matter too**. If full-fibre broadband exists but individuals cannot afford the service or do not know how to use the benefits that it brings, digital exclusion remains. In other words, infrastructure alone is a necessary but not sufficient condition for eliminating digital exclusion in Sunderland: the investment must be matched by awareness, device provision, training and local support.

Data poverty - where households are unable to afford mobile data, broadband, or devices - is a real issue in the UK, with Ofcom statistics suggesting over a quarter of households have difficulty affording communications services. This is where interventions such as databanks can help increase digital inclusion in places like Sunderland.

### What are databanks?

The Good Things Foundation describes its National Databank as "like a foodbank but for mobile data" — providing free mobile data SIM cards via local community partners, to people who cannot access or afford internet services.

Launched in July 2021 with its strategic partner Virgin Media O2, the National Databank was founded to tackle data poverty and isolation during the Covid-19 pandemic.

By early 2022, Vodafone and Three pledged to support the National Databank, expanding its reach from 34 hubs to hundreds. In just one year this grew to over 1,000 Digital Inclusion Hubs providing free mobile data to people in their communities, and the demand for support is still increasing.

Sunderland City Council is working with the Good Things Foundation to deliver National Databanks locally. **Within Sunderland, over 1,500 mobile SIM cards with data have been issued to individuals, while over 140 people have completed courses on Learn My Way - Good Things Foundation's learning platform aimed at developing digital skills.**

**“A huge difference [since using the Digital Health Hub]. We have one gentleman who does not have a computer or smartphone. He has to have access to his job search, upload his CV to job sites and his benefits.... So it is of great importance that we have a reliable service that he can access and he’s just one example.”**

**“I met a man this morning, he’s setting up his own business... he has no computer knowledge at all. He needs to make a proposal to a community group, we’ve been through Google Docs this morning, we’ve worked out what he wants to say and how he wants to say it.”**

**“I have one lady, she comes in every week, two or three times a week and initially she wanted to learn how to use the computer and we started learning the laptop and she decided she needed to learn about her mobile phone. She’s getting quite competent now. She is quiet, she still comes in and goes over sending texts and emails... and when we first started it took ten minutes to send a text message and now it’s a ten second process. So, you can see the difference...”**

Insights from Digital Health Hub volunteers



## Digital Health Hubs: community-based support & connectivity

While infrastructure, devices and data are critical, a key barrier remains user confidence, skills and motivation. **Sunderland’s Digital Inclusion Plan identified that about 30,000 people had “never been online” and 77,000 people were “limited users”.**

Sunderland has responded by establishing Digital Health Hubs across the city—physical community spaces where residents can access support, devices, free Wi-Fi and training.

**What are the hubs and how do they work?**

A total of 37 trusted community partners have joined forces with the City Council, Boldyn Networks and British Esports Federation to establish Digital Health Hubs, open to residents of all ages and which offer support to help people get online and build digital confidence.

**There are now 37 Digital Health Hubs operating across the city**, providing free Wi-Fi, digital tools such as Learn My Way and the UK Databank, volunteer-led support and tailored community programmes. The hubs are targeted at communities with significant digital needs.

**These hubs have supported over 5,000 vulnerable people to date and engaged 182 volunteers in the digital inclusion effort**. And there is evidence that they are making a difference: those using the digital hubs report more confidence with IT and are better able to utilise online shopping and banking, apply for benefits and search for jobs online.

If the **£889,886 Digital Health Hubs programme can achieve a similar return as that found by the Good Things Foundation in the research mentioned earlier, over £8 million worth of benefits from greater digital inclusion could be realised in Sunderland.**

## Digital Health Hubs: community-based support & connectivity

Inclusion begins internally: the organisation that leads the inclusion agenda must also ensure its own workforce is digitally confident, equipped and motivated. With this in mind, Sunderland City Council’s Digital Inclusion Plan and strategy identified having a “smart digital workforce” as one of three key pillars.

Efforts within the council have seen **the number of digitally excluded members of its own workforce - many of whom were frontline service workers - decline from 900 to just 46**. Dedicated IT equipment has been set up for the City Council’s frontline workforce, while **13 “Tech Mates” in the council have supported 29 “Tech Buddies” to develop their digital skills**.

**“I learned a lot more than I expected to, different ways of doing things, shortcuts ... this has made things so much quicker and simplified a lot of what I do today.”**

Sunderland City Council employee

## Putting older tech to good use: the Donate Devices campaign

Sustainability and digital inclusion go hand in hand. Sunderland’s Donate Devices campaign has saved over 1,000 devices from landfill and prevented over 58,000 kg of $CO_2$ emissions, meanwhile giving devices a second life in the hands of Sunderland residents who need them most.

By reducing e-waste and supporting digital access, this campaign is supporting environmental and social sustainability, whilst aligning to the city’s core ethos of leaving no one and nowhere behind. The Donate Devices campaign is empowering people to learn, connect and thrive in an increasingly digital world.

# DELIVERING AN ECONOMICALLY PROSPEROUS SUNDERLAND

One of the key measures of smart city success is the impact of smart technologies on the local economy. Our analysis shows that **Sunderland has seen a significant increase in tech startup rates since 2018**, supported by programmes to encourage new business creation in the city. Industries such as esports also hold promise for future growth. **At the same time, there remain challenges which are being addressed, including access to capital and commercial space to help new businesses reach their potential**.

## Supporting tech startups and scale-ups

**The North East has the lowest density of businesses in England**: in 2025, there were just 744 businesses per 10,000 adults in the region, compared with 1,135 in the South East and 1,436 in London. Supporting entrepreneurialism in the region and encouraging more individuals to start their own business therefore has to form a key role in driving economic prosperity. This is particularly true in terms of helping businesses in high productivity industries such as technology.

**Initiatives such as Tech Startup Sunderland - run by Sunderland Software City and commissioned by Sunderland City Council - are providing such support**. This programme includes providing free one-to-one support to those who might have a business idea but lack the tech expertise, or those who may have an idea and the digital nous but have little to no experience of running a business. Software City also runs Tech Seeds, a six-week fully-funded programme for entrepreneurs who are business-ready and wish to take their startup to the next stage.

To date, **300 individuals have received support through the Sunderland Software City programmes, with more than 150 startup ideas generated and 28 new business registrations**. This includes companies in a range of areas such as healthcare, gaming and mental health.



> **"Tech Seeds has been really helpful ... they bring experts from the industry that will break down otherwise difficult ideas... and then you're able to brainstorm with people in the community "**
>
> *Participant in the Tech Seeds programme*

> **"From my side the pitching [advice] was really beneficial because we got direct feedback from other people who were building [tech products]. And it was in front of a panel who were investors, who we've continued conversations with. It readied us for being able to go out and do other pitches. We actually won a pitching competition off the back of it. The pitching one for me was like, brilliant."**
>
> *Participant in the Tech Seeds programme*

## Case study: developing the Visibility App with support from Tech Seeds

When Louisa founded The Visibility App, she aimed to solve a problem she had seen over and over again among creators, entrepreneurs and small business owners: good ideas weren't necessarily getting seen. "It's a platform designed to help creators, entrepreneurs and professionals grow their visibility online," she explained. The idea began as a WhatsApp community of around 100 members who supported each other's posts – but soon, the limits of manual logistics were clear. "We decided that we needed to develop an app using AI to analyse engagements and track patterns online to see how people can grow online... because in today's world, attention is currency."

Louisa is not from a tech background, so building the product meant finding the right people. At first, she looked further afield. "I went online to search for developers and people to partner with... I saw mostly companies in London and down south... I even started having conversations with them, and almost went on contracting them."

It was only by chance – through speaking to her bank – that she found her way to Sunderland Software City. "I now went online to do research so that I could get grant writing support from Sunderland Software City," she says. From there, she connected with the tech team and wider network. "Mark [at Sunderland Software City] has been really helpful... I got to know about things I needed to do as a startup. And also I heard about the Tech Nation event and applied."

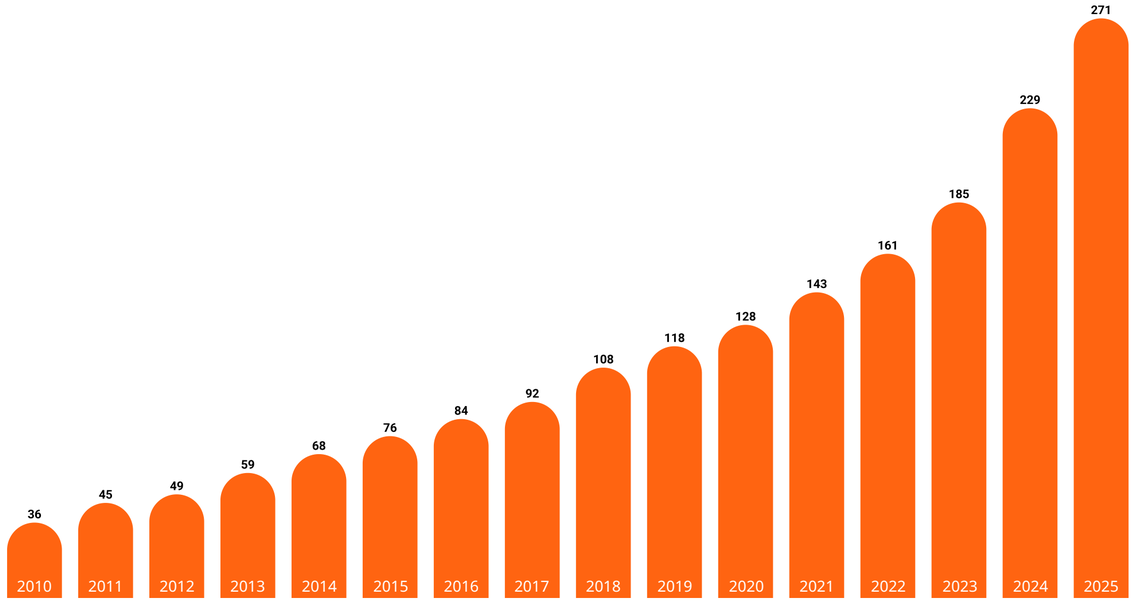
This became a turning point, with the Tech Seeds programme demystifying the realities of building a tech product. Louise also noticed something important: founders were travelling into Sunderland to access this ecosystem of support and contacts. "They were coming from Newcastle because they felt like Newcastle was saturated... you don't need to do much [here] for you to get the help that you need. You always find people that want to support you, that want to signpost you to the right person."

Louisa found the pitching and marketing workshops particularly valuable. "You see what other people are doing. You talk to them. And that community sense... was really beneficial."
Louisa's optimism and aspirations for the future remain rooted in the community she has found here. "Sunderland is... one of the most supportive cities for tech startups," she says. With more targeted support to match the stage she and others are now reaching, there is a clear path for businesses like hers to grow and stay rooted in Sunderland's emerging tech culture.

More broadly, Public First analysis of Companies House data identifies **an upward trend in the number of technology business registrations within Sunderland, with the total number increasing from 108 to just over 270 since 2018**.

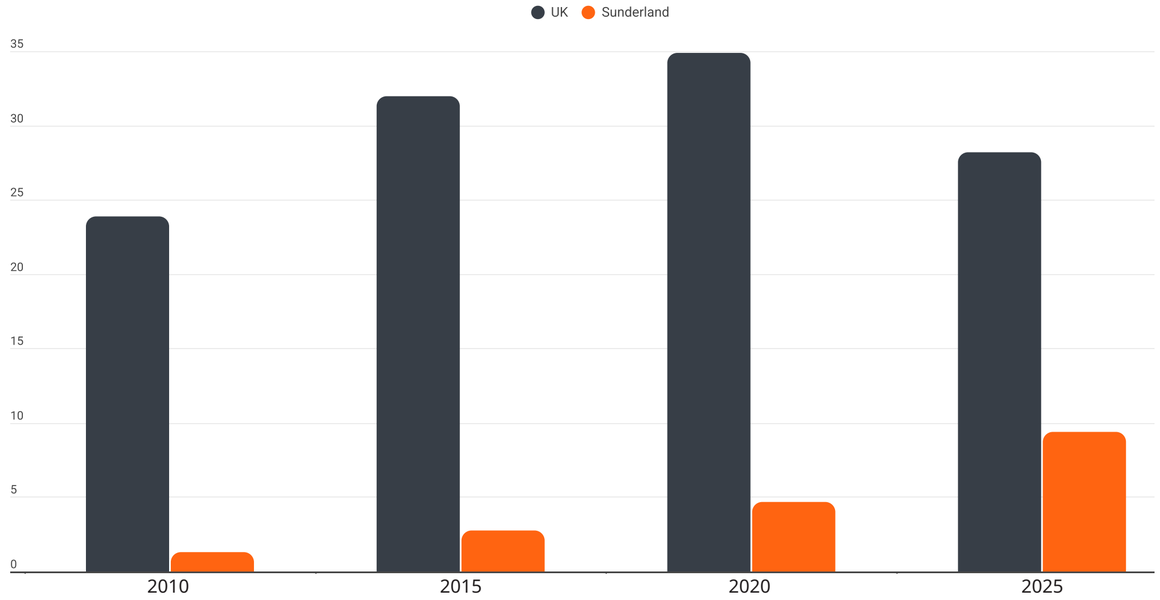
These businesses span a range of sub-sectors, including software development, computer facilities management and ICT consultancies and our analysis of Companies House accounts suggests an **employment footprint of just under 230 jobs.**

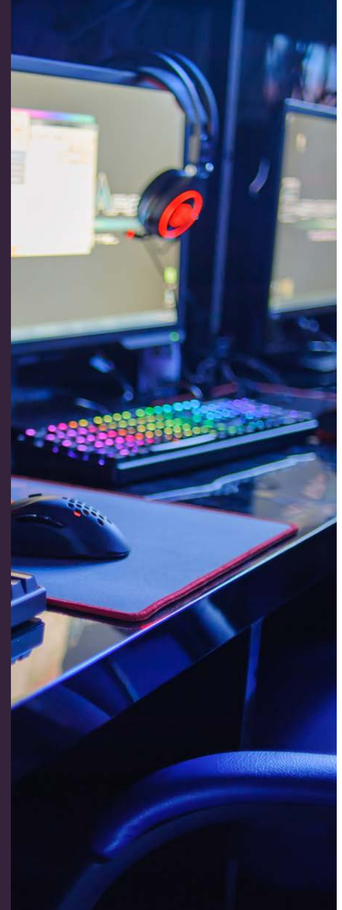
## TOTAL NUMBER OF TECH COMPANIES REGISTERED IN SUNDERLAND




**While the per capita number of tech businesses in Sunderland remains lower than the national average, the latest data show a narrowing of the gap**. In particular, since 2020 the number of tech businesses has declined nationally while continuing to increase in Sunderland.

## NUMBER OF TECH BUSINESSES PER 10,000 PEOPLE





## The economic opportunity of esports

Esports - video gaming as a sport - has a major following across the globe. **The UK alone is home to 39 million gamers and 12 million esports fans, a number that is projected to rise over the coming years**. This popularity is mirrored in the earnings of top gamers, with the top ten worldwide esports earners all having made over $5 million from tournaments and matches.

**Sunderland is in prime position to become the centre of UK esports**. The city has been home to the British Esports Federation (BEF), the national body of esports in the UK, since 2022. The BEF aims to make the UK one of the leading esports nations globally within the next ten years and is opening an esports arena in the city in 2026.

The BEF currently runs the National Esports Performance Campus in Sunderland and has seen **over 50,000 people come through the facility in the last year alone**.

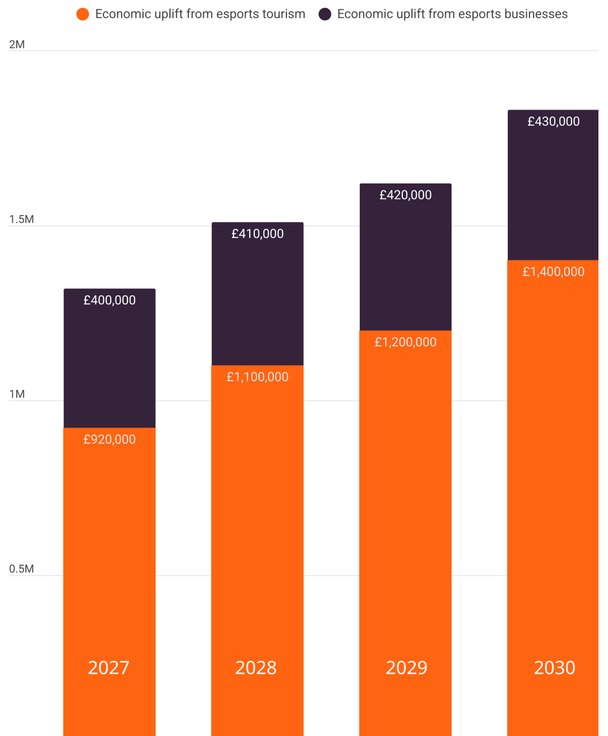
Sunderland becoming a UK focal point for esports is a reflection of the council's ambitious and broad approach to becoming a leading smart city. One of the reasons BEF chose Sunderland was the ambition of the Council. As one person at the BEF put it:

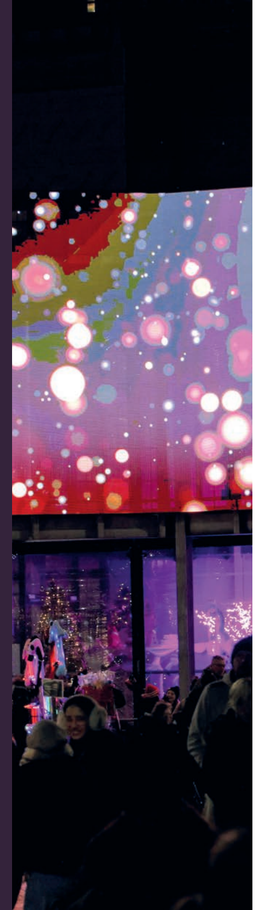
> **"We came for the [property lease] but stayed for the vision of the city ... we liked that the Council was acting like a scrappy startup."**

Together with other partners, Sunderland City Council, Boldyn Networks and BEF have created the Sunderland Open Network EcosysTem (SONET), ensuring lightning fast 5G speeds at both the National Esports Performance Campus and the Stadium of Light.

All of this activity creates real-world economic benefits for Sunderland. Technology companies in the esports space want to capitalise on the benefits of being near other esports companies, and esports events in the city bring in tourists who spend their money at hotels, shops and restaurants. Public First estimates that these economic benefits from tourism and business growth in the **esports sector will add over £1.8 million in economic gross value added (GVA) per year in Sunderland by 2030**.

### ECONOMIC UPLIFT FROM ESPORTS IN SUNDERLAND



## Helping local businesses to thrive - gains from increased connectivity, mobility and footfall

Beyond supporting tech startups and becoming a destination for esports tourism, Sunderland's smart initiatives are helping a much broader range of local businesses to thrive. Data, as well as Public First's analysis and economic modelling, show that:

Over the past five years, **the number of businesses in the city with full-fibre or gigabit broadband access has increased from almost none to close to 3,800 firms.**

**Gains from this increased connectivity are estimated to stand at £66m per year.** A separate study by the consultancy Hatch, produced for CityFibre, suggests **productivity gains in Sunderland of close to £440 million spread over a 15-year period.**

Through increasing dwell time in the city centre, and with over 60,000 unique users (about a fifth of Sunderland's population), **free Wi-Fi could be supporting a 2% increase in city centre store sales.**

**The benefits of free Wi-Fi on footfall are being complemented with the introduction of the Sunderland App,** which launched in 2024 with the aim of helping residents and visitors find information about events, sightseeing, and local offers in Sunderland. The **app now has over 7,000 users.** Most clicked on events in 2025 included the Sunniside Halloween Food Market and Christmas Lights Switch On, supporting additional footfall to these events.

**The 'Sunderland Open Network EcosysTem' (SONET) Project, which greatly enhances the mobile connectivity within the Stadium of Light, could boost stadium sales by up to £2.3 million a year.**

**The Expo Sunderland Pavilion Screen on Keel Square - one of the UK's largest semi-transparent LED screens - has represented 87 artists and had close to 900,000 views.** Further, the interactive digital Pixel Plaza totems nearby have had over 7,300 physical interactions, including through using AI and sensors to transform visitors into virtual rugby players and other characters during the Women's Rugby World Cup in 2025.



**MAADIGITAL: using SONET to create an immersive game**

MAADIGITAL, a design agency based in Gateshead, has used the new next generation network in the Stadium of Light to roll out an immersive game, LOBIT, that turns the whole crowd into players. Using your phone, you can join thousands of fans in a live competition that plays out on the big screen while a real match is happening. The app uses augmented reality, with players throwing a virtual ball in order to win prizes.

SONET's fast and strong Wi-Fi helped overcome a key challenge with rolling out such immersive experiences in stadiums: that it is often difficult to get phone signal in such a venue. Places with large crowds can suffer from network congestion, while the materials used to construct stadiums such as steel and concrete also have a tendency to block signals.

The SONET network has therefore unlocked the possibility of crowd-based games at sports events that could not be done before.

Supported by the Department for Science, Innovation and Technology (DSIT), Sunderland City Council and Sunderland Association Football Club, MAADIGITAL was able to invest in this research & development project.

The first test of LOBIT in 2025 was successful, with more tests planned in 2026. There is now an opportunity to build on this success and turn LOBIT into an app that could be used in sports arenas across the world: creating a global tech export success story from the North East.

## Equipping people with the skills needed to succeed in the digital age

Businesses in Sunderland can only be successful if local residents have the right skills. This includes instilling digital skills and tech know-how from an early age. Yet the **North East of England is currently behind much of the rest of the country in terms of digital skills levels, ranked eight out of twelve regions in Tech UK's Local Digital Index.**

Steps to reduce this divide are therefore encouraging. This includes through programmes such as Sunderland Software City's Digital Careers Programme - which has **reached over 7,500 young people and more than 400 teachers since 2022.** The programme takes a holistic approach to digital skills, aiming to understand the aspirations of young people and how digital skills link to these aspirations. The programme includes a wide range of initiatives, including:

- In-school presentations during school assemblies
- Bringing the digital curriculum to life through engaging activities such as Lego play and a programming activity revolving around an autonomous shuttle bus in Sunderland
- Careers fairs in schools with a range of businesses
- Teacher professional development and information sheets for teachers
- Bringing business representatives to schools
- Site visits giving young people an opportunity to get a feel for day-to-day life in a technology-oriented job role
- Supporting young people with work placements

**"You can get into the [tech] sector easier than I thought and there are many jobs inside the sector to suit you, like science and game production to name a few. I would now look at a career in the tech sector because I feel like there are so many paths and routes to go down that suit what you like. The event was engineered well and I got a taste of what life in it is like and the job roles."**

Student from St Aidan's Catholic Academy

**"The pupils said that the whole experience was very entertaining and interesting and they would love to do more things like this as soon as possible! They are still talking about it this week and were also really enthusiastic with their peers who couldn't attend with one of them telling his class it was "Mint!"**

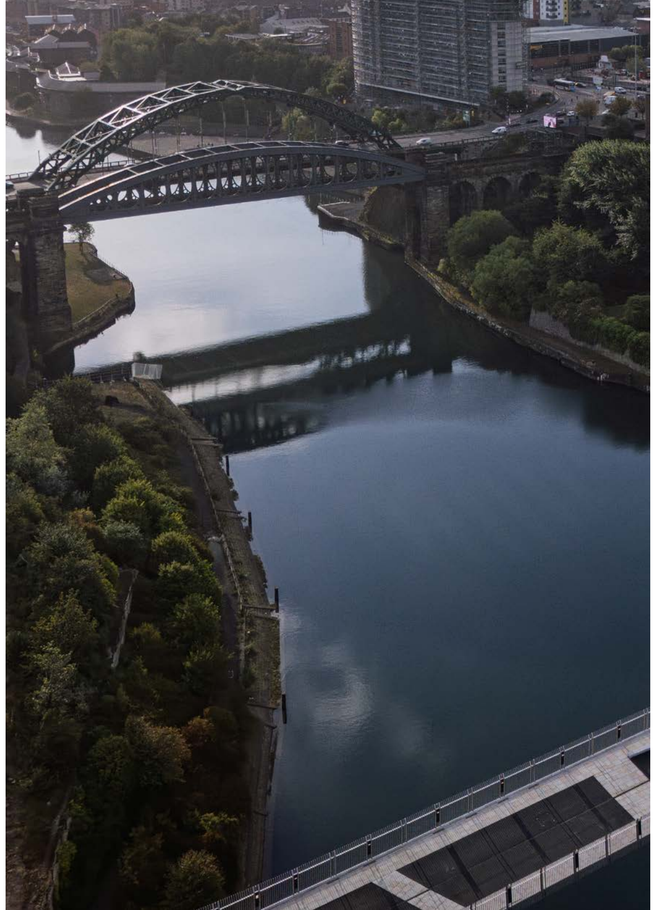
Careers Lead at The Link School

Further to this, Sunderland is putting digital inclusion at the heart of efforts to reduce worklessness in the city. As part of the Department for Work and Pensions-backed economic inactivity trailblazer, **the council has received a £59,690 grant to support £1 million of investment in digital inclusion initiatives**, including career workshops and bootcamps.

# WHERE NEXT?

Much has been achieved in Sunderland to date and with the whole-systems approach and robust public-private partnerships providing sustained investment, the foundations have been laid to leverage far greater opportunity.

Smart initiatives will continue to evolve over the coming decade and beyond - including autonomous mobility, AI and next-generation connectivity - and Sunderland is well positioned to lead.



## Bringing the autonomous vehicle revolution to Sunderland - from the SAM Shuttle to future opportunities along the port corridor

Imagine a world where autonomous buses take themselves around the city, fuelled by green energy, and where traffic jams are a problem of the past. It seems utopian, yet the technologies to enable this future are rapidly emerging, being piloted or put into use.

**The Sunderland Advanced Mobility Shuttle trial successfully took place between January and March 2025 and demonstrated the feasibility of zero-emissions autonomous public transport vehicles operating in a city centre**. Over 280 passengers took part in the trial and on average 97% of the journey was autonomous. The trial was made possible thanks to recently installed low-latency 5G coverage along the entire route. As part of the trial, a Cooperative Intelligent Transport System (CITS) was used to measure adherence to the bus's timetable and to maximise battery length.

This same CITS was also used in a recent trial in the "port corridor" route, from the Port of Tyne to Nissan in Sunderland. The system was used in this instance to reduce delays in journey time - **a follow-up study estimated that CITS led to a 3.6% reduction in fuel consumption and emissions for a heavy goods vehicle**.

Public First has estimated the reduction in congestion resulting from this improvement and found that, **along the port corridor route, green light prioritisation and intelligent speed advice could lead to a 30% reduction in congestion**.

Much like autonomous vehicles and CITS, electric vehicles are the future of modern transport in Sunderland, with the government committing to all new cars and vehicles sold in 2035 being zero-emission vehicles. **We estimate that the number of electric cars in Sunderland in the next ten years will increase tenfold, and that the increased use of autonomous and electric cars and light goods vehicles in Sunderland could reduce congestion by 34% and reduce CO2 emissions by over 100,000 tonnes**.

Sunderland City Council is also propelling its Vehicle Activated Signs (VAS) - roadside electronic signs that use radar to detect vehicle speed and display messages - into the future. Previously the data from VAS would have to be manually downloaded at each sign, but with the new system this data is sent automatically via LoRaWAN. This could result in significant cost savings - if all VAS send data via LoRaWAN **we estimate Sunderland City Council will save over £48,000 a year thanks to freeing up staff time and removing the need for rotation of VAS signs**. There are also likely to be additional savings from reduced damage to signs that can occur during rotation.

## From startups to scale-ups: addressing the funding challenge

The trends identified in this report are positive, though our analysis and qualitative research highlight a number of challenges for Sunderland - particularly in terms of growing the economy and getting business startups on a stronger growth trajectory.

This is at an important time for Sunderland, when ambitious multi-billion pound investment in regeneration is changing the skyline and fortunes of the city, and so it is even more key that smart city initiatives are aligned and making a positive contribution to this transformation.

As with other issues the city has faced, the council and its partners have not shied away from the challenge and have instead set about creating the right conditions for growth, including through:

- **Pipeline Creation and Scale** – financial intervention to find and develop a pipeline of investable tech scale-ups with further pre-seed investment to help the companies gain market traction, and;
- **Seed Investment** - the establishment of a UK investment fund dedicated to a single city, with millions of pounds of private venture capital secured to provide seed investment to expand growth and opportunity.

This is alongside the infrastructure investment, productivity gains and tech partnerships afforded by the city's smart city commitment already highlighted in this report.

## Capitalising on the opportunity presented by AI

Sunderland's Smart City programme has been an early adopter of AI to drive a new wave of public sector reform, enhancing productivity, service quality and organisational efficiency. By embedding AI into core processes, from predictive analytics in social care to automated case management and intelligent customer engagement, the city has realised productivity gains that have enabled services to redirect capacity to higher-value, person-centred work.

Advances in data integration and governance underpin real-time decision-making, enabling more proactive, preventative public services.
Across Sunderland's smart city landscape, AI is accelerating innovation in mobility, energy, infrastructure and public safety, helping Sunderland become more connected, sustainable and inclusive.

The city is demonstrating leadership in this field but also looking ahead, being laser-focussed on the key partnerships needed to realise the opportunities presented by AI to deliver stronger economic growth and improved outcomes for residents and businesses, with Microsoft and Boldyn Networks already supporting this work.

# SUNDERLAND SMART CITY:
## IMPACT REPORT

PUBLIC FIRST