North East England
Code not coal shaping a new digital age

North East

Local Enterprise Partnership

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Code not coal shaping a new digital age

The North East of England is leading a new industrial revolution. Creative, digital, software and technology pioneers are spearheading the region's growing reputation as a hotbed of ideas, entrepreneurial spirit and tech collaboration.

A growing mass of innovative businesses employing highly skilled workers are the modern day standard bearers for a region famed for its pioneering spirit.

Code not coal is underscoring the rapid economic growth of the North East whose entrepreneurial genius brought rail travel to the world through George Stephenson and electric light to homes and businesses through Sir Joseph Swan.

A new breed of industrial pioneers in areas such as digital technology, film and media, software development and computer gaming are now pushing back frontiers just as the region's acclaimed innovators of the Industrial Revolution did over 200 years ago.

It is the ability to harness this entrepreneurial flair into a cohesive and credible strategy, to give clarity and purpose to future momentum, that has caused the UK and international economies to really sit up and take notice of a region on the march.

Multi-nationals like Hewlett-Packard thrive in a region that supports home grown success stories such as Orchard Software, ScottLogic and 3D visualisation solutions pioneer ZeroLight, part of the acclaimed Gateshead-based Eutechnyx Group.

This fertile business environment has attracted investment from acclaimed international innovators such as French computer games developer Ubisoft that has set up a customer relationship centre alongside its Reflections product development studio.

A huge amount of start-ups thrive in creative centres like NETPark, Ouseburn, Hoults Yard and Campus North, base for the Ignite100 growth accelerator, which attracts tech creatives from all over the world and is currently rolling out its programme to Manchester and London.

Pure entrepreneurial talent alone cannot build a sector estimated to be worth £1.1bn to the North East economy by 2020.

It is the North East's unique innovation offer - a joined up region working to the North East Local Enterprise Partnership's Strategic Economic Plan of delivering more and better jobs - that is seeing it thrive.

This was recognised by UK Governments Digital Catapult, which located one of its regional Catapult Centres in the North East in 2015.

An innovation board led by Professor Roy Sandbach and the appointment of the region's first Innovation Director Hans Moller has added focus and drive to activity.

A platform of world class research based in the North East's five universities supports business creation and growth. These are superb hubs for commercialising ideas and top quality innovation.

"Creative, digital, software and technology based services are collectively one of the North East's four smart specialisation areas, giving it competitive advantage by driving rapid growth through the creation of high value jobs."

"The North East has spawned global success stories of its own - management accounting software giant Sage is headquartered in Newcastle, with offices expanding across the world."

"A growing mass of innovative businesses employing highly skilled workers are the modern day standard bearers for a region famed for its pioneering spirit."

Four pillars of strength

The North East is now firmly established as one of the strongest software and technology communities in the UK.

This success comes from four pillars of strength

1 Presence of established, blue chip companies in the North East such as Sage, Accenture and Ubisoft.

2 World class graduate talent, academic expertise and the creation of the Digital Catapult combining the research power of the five regional universities.

3 Exceptional expertise in partnerships such as The Cloud Innovation Centre and Sunderland Software City, Dynamo, Generator and Digital Union.

4 Extensive private and public sector support and finance infrastructure that exists to fuel the region's creative talent.

Tech and creative strength

The numbers, facts and figures.

- North East England is home to more than 1,500 software and technology companies.

- The sector contributes £600m annually to the regional economy.

- By 2020, it is estimated the North East will be home to 2,200 software firms.

- These businesses will employ 20,000 people and bring in £1.1bn to the local economy These firms employ in excess of 15,000 people.

- Creative industries in the North East employ an estimated 58,000 people.

£1.1BN TO LOCAL ECONOMY

MORE THAN **1500** SOFTWARE AND TECHNOLOGY COMPANIES

FIRMS EMPLOY **15,000** PEOPLE

Asset base

The North East has the asset base in place to help take new ideas and research from concept through to commercial reality.

▶ The Centre for Process Innovation (CPI) based in Redcar and Sedgefield is the process industry focus for the network of national catapult centres, helping businesses to scale up and test manufacturing processes.

▶ The National Renewable Energy Centre (Narec) in Blyth provides a unique integrated portfolio of open access testing and research facilities for renewable energy industries.

▶ The North East Business Innovation Centre in Sunderland offers support and incubator services for businesses of all shapes, sizes and sectors.

▶ The North East Technology Park (NETPark) in Sedgefield offers a physical and virtual technology resource to the whole of the North East.

▶ The Centre for Ageing and Vitality at Newcastle University brings together cross-sectoral innovation for health and well-being.

▶ The Automotive and Manufacturing Advanced Practice Institute at the University of Sunderland provides facility based solutions for companies looking for innovation as a route to growth.

▶ Software City in Sunderland and Digital City in Teesside are engines for growth in software, digital technology and media.

▶ Newcastle Science Central, a major investment into a new innovation hub housing entrepreneurs, scientists and students collaborating to plan and develop solutions for tomorrow's cities.

▶ The Cloud Innovation Centre at Newcastle University educates and encourages innovation in the analysis, use and sharing of big data.

▶ Cobalt Business Park in North Tyneside and offers world class facilities and is home to global brands such as Accenture, Siemens and Procter & Gamble, and has the UK's largest purpose built data centre campus.

> *"It helps small firms build links with larger companies, universities and the public sector, with a true focus on commercialisation and wealth-creation for the region."*
>
> *Roy Sanbach,*
> *Chair of the North East LEP's Innovation Board.*
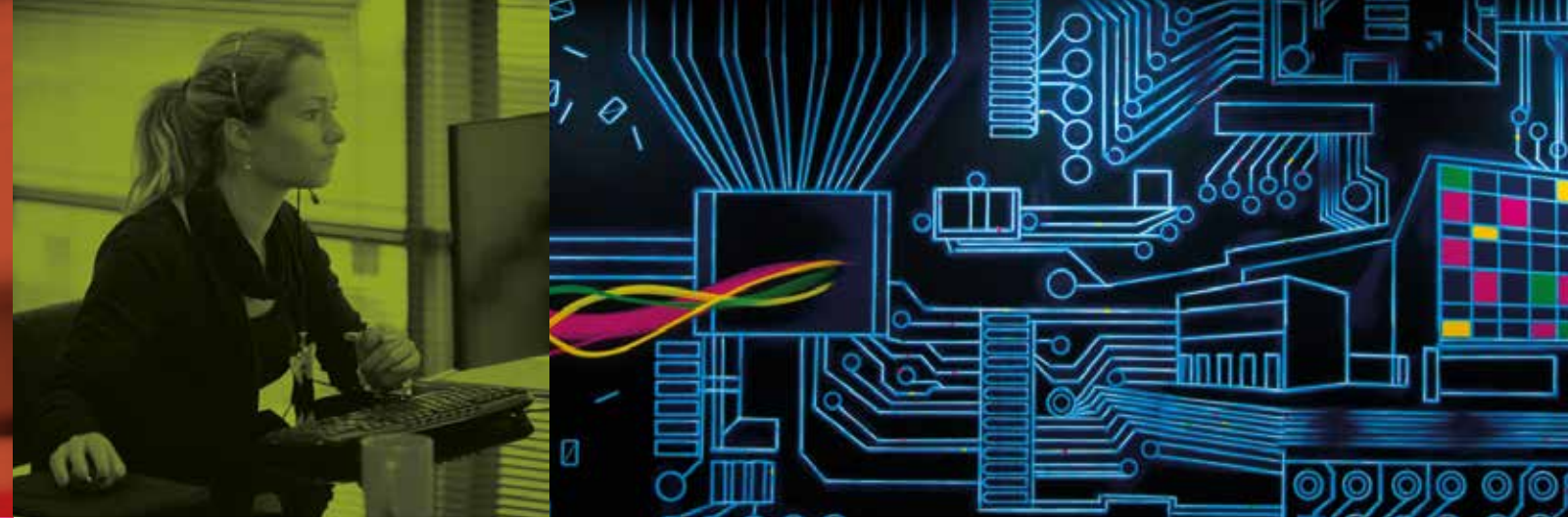
Cohesive and credible

Professor Roy Sandbach chairs the North East LEP's Innovation Board, driving forward a strategy to create the new businesses and jobs underpinning rapid economic growth. He explains how a cohesive region working to the LEP's credible innovation agenda is reaping economic rewards.

"A joined up region – working to the North East Local Enterprise Partnership's Strategic Economic Plan of delivering more and better jobs – has ensured we have secured one of only three coveted UK Digital Catapult national centres.

"The Digital Catapult Centre North East and Tees Valley opened its doors in March in Sunderland Software City.

"It is a base for creative and technology start-ups and small businesses to develop and showcase their products.

"It helps small firms build links with larger companies, universities and the

public sector, with a true focus on commercialisation and wealth-creation for the region.

"The North East Digital Catapult Centre underlines an important point – the reason that the North East was awarded the catapult was the coherent and credible partnership between our five universities and two LEPs in the bid led by David Dunn at Sunderland Software City.

"Having a cohesive and coherent story doesn't just happen overnight. It has to be strategic. At the North East LEP we have a strategy which is quite simple to understand – we want more and better jobs.

"We will get better jobs by focusing on what we are good at and one of those sectors we are very good at is digital and creative.

"There's such a fantastic opportunity here. We are the only industrialised region where you can reach out to all the schools, colleges and universities, to every firm both large and small, every MP and business organisation."

LEP Innovation Director Hans Moller added: "What I really love in this region is the ambition and willingness to improve – the appetite businesses have to innovate is what inspires me in my role everyday."

Access to Finance

Helping entrepreneurs and growing companies access the finance they need to turn an idea into commercial reality or fund the next step in their businesses growth is crucial. The North East has a suite of funds and investors to nurture this growth.

Be it seed funding, a bridging loan or support for capital investment, access to finance is critical in the growth curve of all businesses.

The North East LEP has created the North East Access to Finance Guide as a simple to use, informative resource to support SMEs.

www.nea2fguide.co.uk

Business support and access to finance are key drivers for more and better jobs. They are necessities in addressing market failures to support stronger indigenous businesses, to drive up GVA and employment.

The North East Access to Finance Guide allows companies to search for equity, grants, loans, business support and help for social enterprises.

Each funding stream is named, with contact details of the fund manager, the financial support available and its terms. The North East is also home to **Ignite,** one of Europe's most successful start-up accelerator programmes.

It supports up to 50 start-ups at any one time and is based at Campus North, Newcastle. As a result, the North East has more new tech start-up firms than any area outside London.

www.ignite.io

"Business support and access to finance are key drivers for more and better jobs."

A vibrant network environment

Digital and Technology businesses in the North East are supported by a number of networks and clusters.

Dynamo: is an industry-led initiative focusing on growing the tech sector in the North East which brings together IT organisations and employers, technology hubs, education, local government and employer support initiatives.
www.dynamonortheast.co.uk

Thinking Digital: Thinking Digital is an annual North East event which aims to provide an opportunity for those interested in digital innovation to connect to a regional, national and international community of other innovators, inventors, leaders, makers and creators of our future. **www.thinkingdigital.co.uk**

Design Network North: brings together businesses and individuals who work with design in their industry.
www.designnetworknorth.org

Co-location – academia and business working side by side. To cohesion and credibility, add collaboration. Co-locating academia and cutting-edge business is helping the North East make huge strides forward in the digital sector.

Paul Watson, Newcastle University's Professor of Computer Science and Director of the university's Digital Institute, and his team of academics and researchers are working out of The Core building on Newcastle's Science Central site, making major advancements in cloud computing.

Paul and his team are working with people and organisations in all areas of society on £20m worth of projects, using cloud computing to do things scientists haven't been able to do before with data.

With £1m from Government, they are creating the Cloud Innovation Centre on Science Central to work with North East businesses and the public sector to help them take advantage of cloud computing to improve competitiveness, make new products and upskill the region.

www.ignite.io

"It's the most exciting time of my career. We have found an area of research and work where we are training up the next generation of professionals, with the skills that companies need".

Mini Silicon Valley

Building a base of cutting edge firms and retaining the best innovation talent could be the lure for tech giants such as Google and Apple to put down roots in the North East. Tech pioneers like Mark Little and Steve Caughey are demonstrating how local brainpower has an energising effect on global investment.

Red Hat is based in The Core on Science Central. It is one of the world's leading computing companies, it has only two research centres in the world – one in the United States and one in Newcastle University.

Mark Little, Red Hat's Vice President, said: "We moved in with the University and a couple of years ago we worked in partnership to create the Red Hat University Research Centre.

"The idea was always to co-locate. The reason we do it is that it commits us to long-term research.

"I think the fact there will be academia and industry focused on one area in a hub is what's been missing here for a while.

"Silicon Valley, US west coast have been doing this for years, where industry has been co-located with universities and vice-versa. Microsoft and Cambridge were the first one in the UK.

"We've got people who have come to work with us from Google, Apple and IBM and likewise some of our people have gone to work for them.

"A mini Silicon Valley, that would be good for the company and the University and also for the region."

"The best case scenario - I would like to see more of us, more companies. It's great that we have Red Hat but both us and the University work with other companies and it would be nice to have them on site with us at the University - Google, Apple and others."

"I think the fact there will be academia and industry focused on one area in a hub is what's been missing here for a while."

Coal mining to data minings

Another tech leader working from Science Central is Steve Caughey.

Steve and his team at Arjuna Technologies Limited are trailblazers in the field with an IT history traceable back to the mid 1980s as a Newcastle University research group.

"I often talk about from coal mining to data mining," he said.

"It's a strange contrast but the thing I emphasise is the raw resources. The local economy was originally built on coal while the raw resource of the future economy is data.

"Both are locked away and people have had to apply innovation skills to extract them and get value."

Extracting value from data used to mean having access to vast computing resources. Just a few short years ago, university basements were filled with banks of huge computers, taking in some cases, years to process results.

Fast forward a decade, and cloud computing has transformed the way organisations use data, providing them unlimited potential to access, analyse and exploit it for their own needs. "Cloud and big data technology will be big drivers of innovation and the North East has an important role leading skills development in those areas, especially around the university," said Steve.

"To have The Core here where we have a whole suite of experts in innovation in such a space makes this a unique national resource."

He continued: "For us the benefits of The Core are being plugged into the University, Red Hat and all the research assistants and PhD students.

"We are just across the corridor from all these people and there's the capacity for those 'water cooler' moments of inspiration.

"To have The Core here where we have a whole suite of experts in innovation in such a space makes this a unique national resource."

MORE THAN 2,000 COMPUTING AND CREATIVE DESIGN GRADATES EVERY YEAR

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ICT students

High quality graduates are enhancing local employment and links between universities and employers are strong.

There are more than 100,000 students studying at Northumbria, Durham, Newcastle, Teesside and Sunderland Universities, delivering 2,000 computing and creative design graduates every year.

The key areas of expertise are:

▶ **University of Sunderland:** Big Data Managing and Searching High Volume and Varied Data, e-Discovery, High Speed Analysis, Trustworthy and Secure Data and Video Data Mining.

▶ **Newcastle University:** Cybersecurity, Cyber Physical Systems, Bioinformatics, Cloud Computing for Big Data Analytics and Digital Civics.

▶ **Durham University:** iARC, NEW HPC Methods and Systems, Complex Data Analytics including Humanities, Agent-based Modelling, Social Computing, Intelligent Imaging and Cybersecurity and Cybercrime.

▶ **Northumbria University:** Cybersecurity and Trusted Networks, Privacy, Global Identity Management, Security Visualisation, Useable Security and Protecting Citizens.

▶ **Teesside University:** Interactive Digital Technologies and Healthcare and Entertainment.

The five North East universities consortia 'Creative Fuse North East' project is aimed at developing the creative and digital sector and encouraging increased creativity and innovation spillover into the wider economy.

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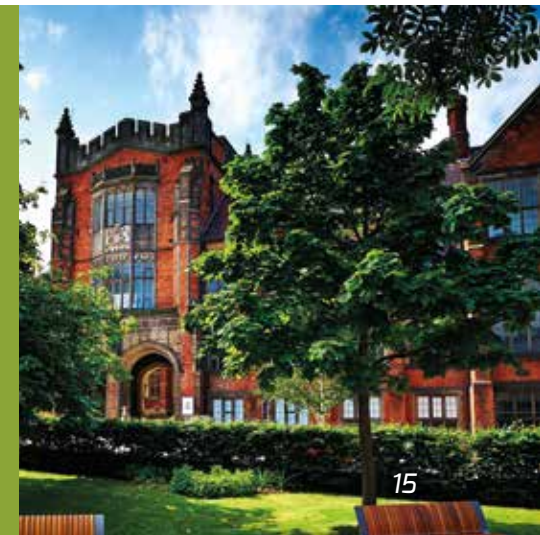
"It showcases the North East's increasingly prominent role as a key location for digital companies and is helping to create more and better jobs."

ADDITIONAL 150 JOBS IN THE TECH SECTOR

Case study:
Digital Catapult Centre North East and Tees Valley

Based in Sunderland, the centre works with businesses, universities, colleges and the UK's other two Digital Catapult Centres to unlock value from everyday data.

It showcases the North East's increasingly prominent role as a key location for digital companies and is helping to create more and better jobs, drive innovation and deliver millions of pounds in investment and funding.

The centre helps businesses and organisations from a range of sectors to better understand and exploit the value of the data

they generate and improve their products and services accordingly.

It promotes information sharing between companies which opens up new business models and generates new revenue streams.

The centre's work is expected to create at least 40 new software companies in the region over the next three years with an additional 150 jobs in the tech sector.

Case study:
The Test Factory

Online assessment firm The Test Factory has enjoyed spectacular growth since it opened with a workforce of just two in Sunderland at the beginning of the Sunderland Software City initiative.

Based in the Evolve Centre on Rainton Bridge, The Test Factory develops bespoke online employee tests for businesses including HSBC, the BBC, Vodafone and Microsoft.

Since its creation in 2007, it has quadrupled its workforce and opened multiple offices. The company now employs more than 50 people and has opened an office in Chicago – the United States now representing a third of the company's revenue.

Managing Director Kevin Beales attributes Sunderland Software City as playing a key role in his company's success.

"We set up in Sunderland because of Sunderland Software City," he said.

"They've not only given us their expertise and advice but also introductions to the right people, information and access to sources of funding and networks which has helped us become the company we are today."

Case study:
Ubisoft creates EMEA Consumer Relationship Centre

The creator of the acclaimed 'Assassin's Creed' and 'Tom Clancy' gaming titles set up its EMEA consumer centre in Newcastle in 2015.

The strategic move by the world's third largest publisher of video games is designed to bring consumers closer to the development of Ubisoft games and reinforces Newcastle's reputation as a leading UK tech hub.

A range of bespoke services were provided by the NewcastleGateshead Initiative and Newcastle City Council to secure Ubisoft's investment following a competitive bid.

This included property solutions, access to finance, assistance with the relocation of staff and their families and introductions to business networks and key business contacts.

The consumer relationship centre operates seven days a week answering enquiries via phone, email, forums and social channels in 11 different languages.

Ubisoft plans to expand the centre to include 100 team members by the end of 2015, with ambitions to grow the team further to 200 strong.

ADDITIONAL 100 TEAM MEMBERS BY THE END OF 2015

Case study:
ZeroLight virtual car showroom

Pioneering real-time 3D visualisation developed by Gateshead- based ZeroLight is transforming the experience of buying and selling cars in the digital age.

Choosing a new vehicle by browsing cars outside a local showroom or flicking through the pages of a trade magazine could soon be replaced by viewing a virtual sweep of a digitised showroom housing your brand new motor.

For the car dealer, ZeroLight virtual showrooms open up a whole new world for them, to showcase all the configurations of a vehicle to a buyer in a way they have never been able to do before.

Working from a desktop PC in the showroom, they can guide buyers through their prospective purchase with interactive, high fidelity 3D visuals.

Where in the past they relied on brochures, paint, fabric samples and 2D web graphics, the buyer can now view the shiny new car of their dreams from a range of angles, colours and modifications in a stunning virtual showroom.

ZeroLight is now the world's leading provider of real-time virtual showrooms.

"ZeroLight is transforming the experience of buying and selling cars in the digital age."

Case study:
Sunderland Software City

With space for 60 businesses, Sunderland Software City is backed by some of the best known technology firms in the world.

The three-storey centre is the destination for big business, ambitious SMEs and progressive entrepreneurs seeking a custom built hub that benefits from set-up, connectivity and infrastructure to help them grow.

Sunderland Software City is centered around facilitating growth and nurturing entrepreneurial ideas to enable people and businesses to thrive.

Its connections between software businesses, education and support services enable it to develop a strong regional workforce where people aspire to attend university and establish careers in the software businesses of the region.

It is committed to giving as many people and businesses as possible access to the support and expertise they need to drive forward the software industry in our region.

"High quality graduates are enhancing local employment and links between universities and employers are strong."

Case study:
Accenture Secondary School Partnership

Accenture is pioneering new ways of cultivating the growth of IT skills that businesses need for the future by creating a partnership with secondary schools to influence curriculum, set real life business projects and provide industrial placements.

Starting with Year 8 students and going up to graduates, the company is creating programmes to attract and nurture professional growth within a corporate IT environment.

This involves working with children across a broad academic and social ability spectrum, to grow aspirations and develop an advanced skill base from which to recruit.

"Accenture is pioneering new ways of cultivating the growth of IT skills that businesses need."

Case study:
The future – nurturing talent

It is imperative that the North East embeds the importance of innovation with the next generation, tomorrow's business leaders and entrepreneurs.

The region is investing heavily to ensure that young people are inspired to pursue IT as a career through 50 active Code Clubs in the region, five CoderDojos, an IT Apprentice Hub and the Dev Academy.

"The region is investing heavily to ensure that young people are inspired to pursue IT as a career."

Case study:
CoderDojo North East

CoderDojo is an open source, volunteer-led movement centred around running free not-for-profit coding clubs for young people.

Youngsters aged between five and 17 learn how to code, develop websites, apps, programmes and games.

Volunteers set up, run and teach at the clubs, with a strong emphasis on making coding fun and sociable.

North Tyneside Council's School Improvement Advisor for New Technologies Chris Wilde is leading CoderDojo North East's latest club.

Based in the North Tyneside City Learning Centre in the grounds of Marden High School in Cullercoats, it takes advantage of the centre's superb facilities to enthuse youngsters about the career opportunities coding can open up for them.

Case study:
Northern Futures
University Technical College

The UTC was given the go-ahead by Government in February 2015. It is an employer driven learning institution aimed at putting the North East at the centre of the UK science and technology industry.

The college will cater for students aged 14-18 specialising in IT and healthcare sciences, helping young people develop the right skills for a successful future career.

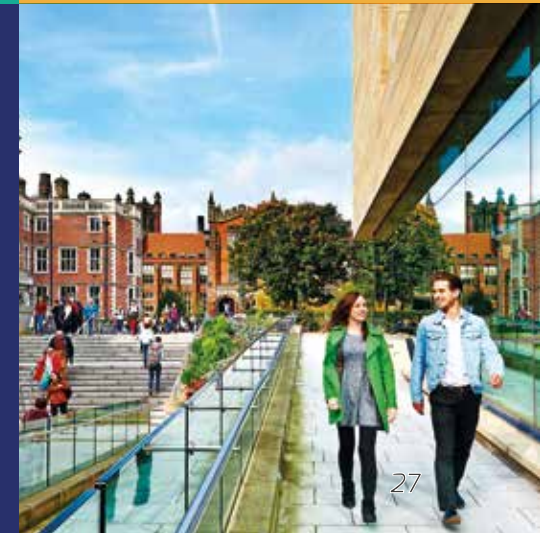*"The college will cater for students aged 14-18 specialising in IT and healthcare sciences."*

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