Hull and East Yorkshire Digital Framework

HEY Hull and East Yorkshire Local Enterprise Partnership

Humber **HEY** Skills Partnership

T:C Partnership
Training • Education • Careers

DIGITAL SKILLS PARTNERSHIP
HUMBER

KADA

FOREWORD

The framework covers a diverse range of issues, including digital skills, business support, connectivity, infrastructure, innovation, public service transformation and delivery, the use of digital technologies in industrial transformation and net zero.

The opportunity to grow our digital and technology economy, coupled with attracting and retaining skilled people and talent, is real and one we must seize. We must capitalise on our unique assets that set us apart from other areas, such as our exceptional digital connectivity, green infrastructure and innovative businesses and their leaders, if we are to retain our talented and skilled workforce and sustain this growth.

We must also ensure that, without exception, all of the region's residents are able to access the economic opportunities we create, engage with digitally transformed public services, participate in the many education, learning and skills opportunities available and enjoy the benefits of improved quality of life brought through lower carbon emissions and new clean energy sources.

All of this can be achieved with the ongoing support of our private sector, University and other research institutions, the public sector, education and training providers as well as the voluntary and community sector. Collaborating effectively, we can create genuine, sustained improvement in the quality of life for the region's communities through greater economic prosperity and better connected communities.

James Newman, OBE
HEY LEP Board Chair
July 2023

The Humber Local Digital Skills Partnership's Digital Framework provides a comprehensive outlook on Hull and East Yorkshire's digital ecosystem and a strategic framework around which all stakeholders in the region can align in order to capitalise on the genuine opportunities for economic growth and community development for the residents of Hull and East Yorkshire.

Developed by the Humber Local Digital Skills Partnership, in partnership with the Hull and East Yorkshire Strategic Development Fund 2 Partnership, it is built on input from multiple sections of our community, including the public, private, voluntary and community sectors, education and training providers and young people themselves.
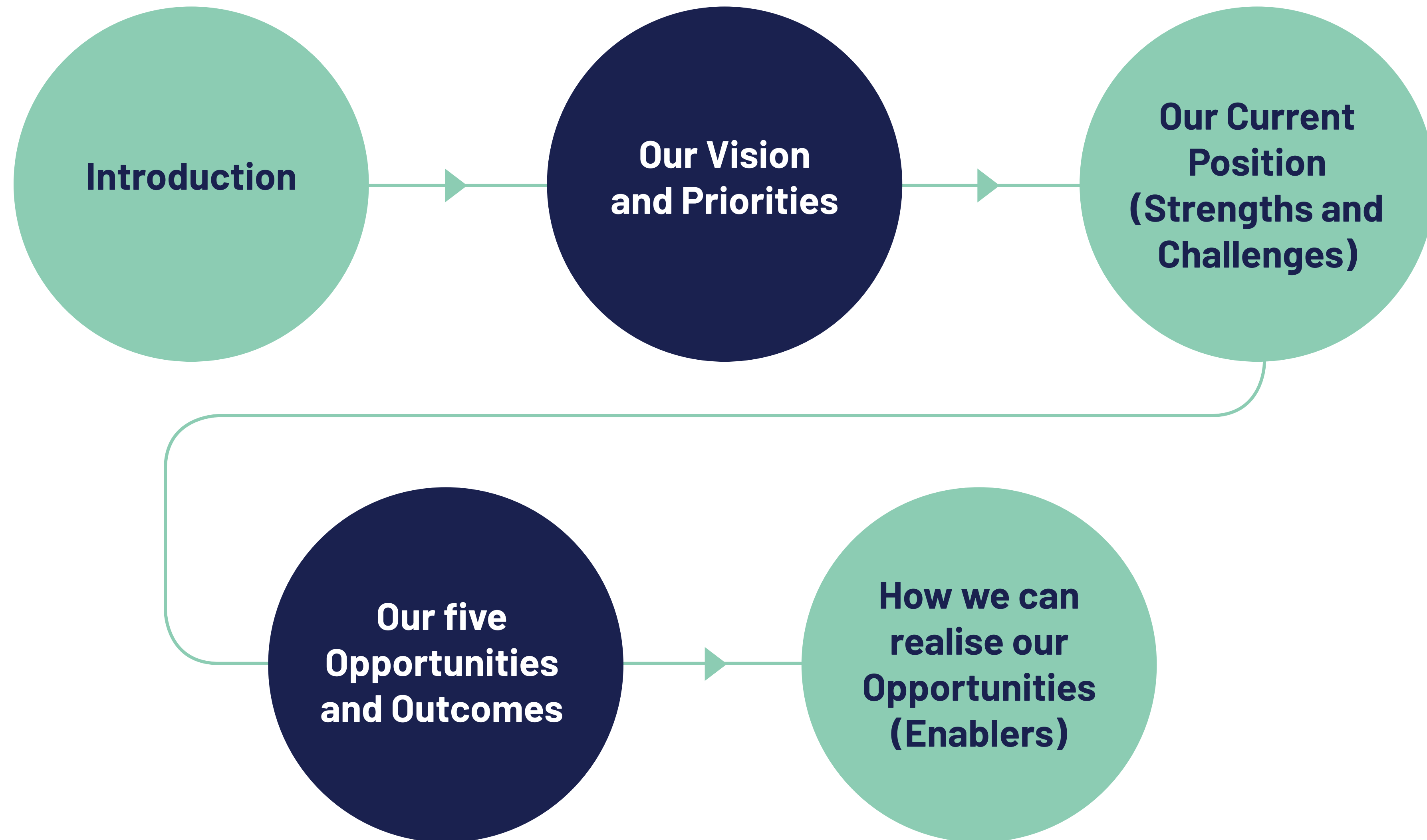
Acknowledgements

Framework Contents

Introduction → Our Vision and Priorities → Our Current Position (Strengths and Challenges) → Our five Opportunities and Outcomes → How we can realise our Opportunities (Enablers)

INTRODUCTION

In 2017, TechUK described Hull as "the epicentre of East Yorkshire and North Lincolnshire's digital tech community"[1] with 70% growth potential. Six years on, this Digital Framework provides a vision to grow the tech sector and use of digital across the entirety of the East Riding of Yorkshire (East Yorkshire) and Hull.

1) Tech Nation, 2017, Hull Profile.

This Digital Framework identifies the key strengths, opportunities and challenges for advancing HEY's digital and tech economy and skills pipeline through the lens of Industry 4.0 (and beyond) themes of connectivity, infrastructure, public service provision and use of digital technologies in industrial transformation. The Framework provides an overarching vision for the HEY digital and tech ecosystem with three cross-cutting principles and five leading opportunities and their supporting factors (enablers) for realising the vision.

Systematic desk research and consultation with a wide range of stakeholders in HEY were undertaken to understand the HEY digital and tech ecosystem and to capture insights from education and training providers, public and voluntary and community sector organisations, digital and tech businesses and young people.

VISION

Hull and East Yorkshire (HEY) is a digitally confident and aspirational place to live, study and work. Businesses of all types and people of all ages and backgrounds can benefit from using digital in everyday life and work.

A thriving tech cluster and skills ecosystem reflects a forward thinking HEY region with a rich cultural, creative and industrial heritage and strong ambitions for a digital and sustainable future.

PRIORITIES FOR DELIVERING THE VISION

Businesses working together with providers to close skills gaps.

Strong collaboration across the public, private and voluntary and community sectors in Hull and East Yorkshire to unlock the scope to improve services and digital engagement, and secure inward investment.

Promote Hull and East Yorkshire's key strengths, digital aspirations and lifestyle offer to attract and retain diverse talent in HEY's digital and tech and green energy sectors.

Current position. Our strengths.

Connectivity is high, Hull outperforms regional and national averages for superfast, gigabit, full fibre and upload/download speeds. Full fibre premises in Hull (99.7%), East Riding (81.4%), England (50.2%).

Hull is a 'tech hub' (Tech Nation, 2021) ranking 6th in 2020 in the UK for venture capital investment (from 14th position in 2017)[1] with £81.4m, including £80m raised by Smart City scale up Connexin.

Our lifestyle offer includes coastline, maritime heritage, woodlands, the rolling hills of East Riding and affordable housing.

We have invested in EdTech for our digital pipeline with £2.7m capital and revenue investment from the DfE's Strategic Development Fund (SDF2) in Digital and Low Carbon.

We are innovating, embedding new ways of learning with employer partnerships and digital adoption across HEY, including a new SDF2 supported green energy and digital innovation facility in Hull.

1) Assessing the UK's Regional Digital Ecosystems, September 2021, Department for Digital, Culture, Media & Sport

Current position. Our strengths.

We are creative, with an estimated 1,050 firms in the cultural industries[1], with clusters in theatre, arts, music, film & TV complementing our tech strengths and supporting innovative thinking.

We have industrial strengths, in steel and glass manufacturing, marine engineering, shipbuilding, and growing tech and environmental clusters in agri-tech, flood resilience, carbon capture and renewable energy with the world's largest off-shore windfarm at Dogger Bank.

We are home to a sector leading tech incubator in Hull's iconic Fruit Market and @TheDock Tech Cluster Wykeland development. C4DI is the UK's largest privately owned incubator with a community of over 3,000 people and a growing hub of innovation led tech businesses including multinationals, scale ups and start-ups like Boots, Nestle, GXO, Saab, KCOM, SGS, Ideal, Arco, Rubicon, Summit, Sauce, Group55, Bombyx, Ipaas, Principal IT and many more.

Our digital employment is growing, the digital technology sector in HEY employs 6,640 people, up 10.2% against 3.2% nationally with forecast growth.

1) Prospects for Creative Growth, A Research Report for HEYLEP, September 2022, Kada Research

Boosting our digital pathways with **SDF2** investment

Digital pathways **A level Computer Science** teaching resources and capital investment upgrades to library and careers facilities (Wyke 6th Form College)

Diversifying provision for employer responsive short courses, Foundation Degrees in Environmental Sustainability, and provision for mechanical engineering & fabrication, precision engineering, carbon capture infrastructure & automation in manufacturing, mechatronics (HETA, Hull College and East Riding College).

Electric vehicle (EV) development capturing zero carbon farming, EV installation and charging stations, and technician training. Innovations for charging and commercial farm-based technologies using linked photovoltaic and battery storage with plans to address transport decarbonisation needs (Hull College and Bishop Burton College).

Digital resources, online and 3D/360 visual training including VR and metaverse training modules and apps for Level 3–5 provision for the low carbon economy (Bishop Burton College, Hull College and East Riding College).

Developing STEM pathways in building services and environmental technologies including ground and air source heating, hydrogen, solar and energy management (Hull College, Wyke 6th Form and Wilberforce 6th Form College).

Boosting our digital pathways with employer-led provision and partnerships

Closing the gap between industry needs and education with apprenticeships and Higher Technical Qualifications focussing on renewable energy at HETA (Humberside Engineering Training Association).

Collaborative careers education information, advice and guidance (CEIAG) e.g. the STEM Learning ENTHUSE Partnership at Dogger Bank windfarm, HEY Careers Hub, and BAE Systems CEIAG project with young people and their families.

Innovative employer-led learning in Engineering, Creative and Digital at Ron Dearing UTC involving key partner collaboration to provide the technical skills for routes into digital and tech employment. Partners include KCOM, Siemans Gamesa renewable energy, Smith & Nephew and C4DI.

Creating routes into growing clusters in HEY such as agri-tech at Bishop Burton College and supporting the skills pipelines for digital and tech, engineering and advanced manufacturing with Institute of Technology at East Riding College.

Boosting our digital pathways with employer-led provision and partnerships

Developing a diverse offer with independent training providers such as McArthur Dean Training for apprenticeships, and community-led provision at Humber Learning Consortium.

Developing new technical pathways for digital careers in Further Education (FE) and beyond, including Digital T Levels at Hull College and East Riding College / TEC Partnership, Wyke 6th Form College and Wilberforce College, and other digital provision at John Leggot College.

The University of Hull centre of excellence for Data Science, Artificial Intelligence, and Modelling (DAIM) **brings together practitioners from across traditional disciplinary boundaries.** DAIM's ambitions encompass the provision of exemplary service within the University, and beyond to the public sector, that will enhance mutual goals and tackle complex industry issues. DAIM runs an extremely successful and popular MSc conversion course that takes in students from any discipline and trains them up for the workforce in AI and data science. Their MSc has enrolled 864 students since September 2020 with graduate destinations ranging from the banking sector to start-ups, the high street and security.

Opportunities from digitalisation

- Digital technologies have transformed how businesses and services operate around the world and boosted productivity. Digitalisation can drive productivity in manufacturing where research suggests up to 50% reductions in machine downtime, 30% increases in throughput and 85% more accurate forecasting[1]. Key benefits of digitalisation for trade can include, for example, lower barriers of entry, wider finance availability, and the potential to identify and reduce fraud[2].

- Research shows that by 2025, digital technologies will create at least 12 million more jobs than they eliminate, as people with the right skills will be needed to program, maintain and repair them[3].

- Industry 5.0 will see people and businesses harnessing digital tools to solve global challenges and "provide prosperity beyond jobs and growth"[4]. In HEY this means using digital tools to help decarbonise industry and to accelerate the green economy to drive inclusive growth. TechUK say HEY's green energy sector can grow through digital technology adoption for efficiency and safety gains and offshore renewable development[5].

- Automation and digital adoption present significant opportunities for manufacturing industries in HEY, not just for decarbonisation, but to also facilitate competitiveness, efficiencies and growth in output, as well as offering wider opportunities for UK digital exports[2].

- Digital tools, data, and technology can generate similar productivity and sustainability benefits for agriculture, cultural industries, mobility, public services and health and social care.

- HEY's growing tech and digital sector provides a local supply chain to develop software, apps and platforms in response to specific local service provider or industry needs. HEY's creative sector provides the design expertise and creativity to use digital tools to customise and personalise products or for societal benefit.

1. Capturing the true value of Industry 4.0, April 2022, McKinsey & Co.
2. Trade data and digitalisation, March 2022, Institute of Export and International Trade
3. Here's how automation and job creation can go hand in hand, September 2022, World Economic Forum
4. Industry 5.0, European Commission
5. Building The Future We Need, Yorkshire and Humberside Digital Dialogue and Regional Report 2020, Tech UK

Our challenges

- **Connectivity gaps:** Not everyone is benefiting from advanced connectivity; East Yorkshire lags behind Hull for full fibre access.

- **Lower wages and attracting and retaining diverse talent:** Socio-economic disparities exist with below average full-time weekly wages and economic inactivity increasing more rapidly in Hull and in East Yorkshire than nationally[1]. Yorkshire and the Humber is the fourth lowest UK region for median pay in the digital sector (£32.8k) and median pay for IT and telecoms professionals (£37.7k)[2].

- **Business diversity and private investment:** HEY's digital business base is micro dominated[3]; limited diversity could create sector vulnerabilities. During the Covid-19 pandemic digital businesses in HEY declined between 2019-22, though at a slower rate than nationally and regionally. Attracting private / angel investment remains a challenge for the HEY region.

- **Barriers to progression:** Local demand for advanced digital skills is increasing but transition to higher level digital skills pathways is constrained by GCSE English & Maths attainment and STEM A Level uptake, including Computing, being lower than regional and national levels, particularly in Hull.

- **Keeping pace:** Rapid change in digital technologies and skills needs creates challenges for curriculum development. These challenges are compounded by skill and labour market shortages affecting HEY's digital and tech sector and teaching workforce, particularly in FE.
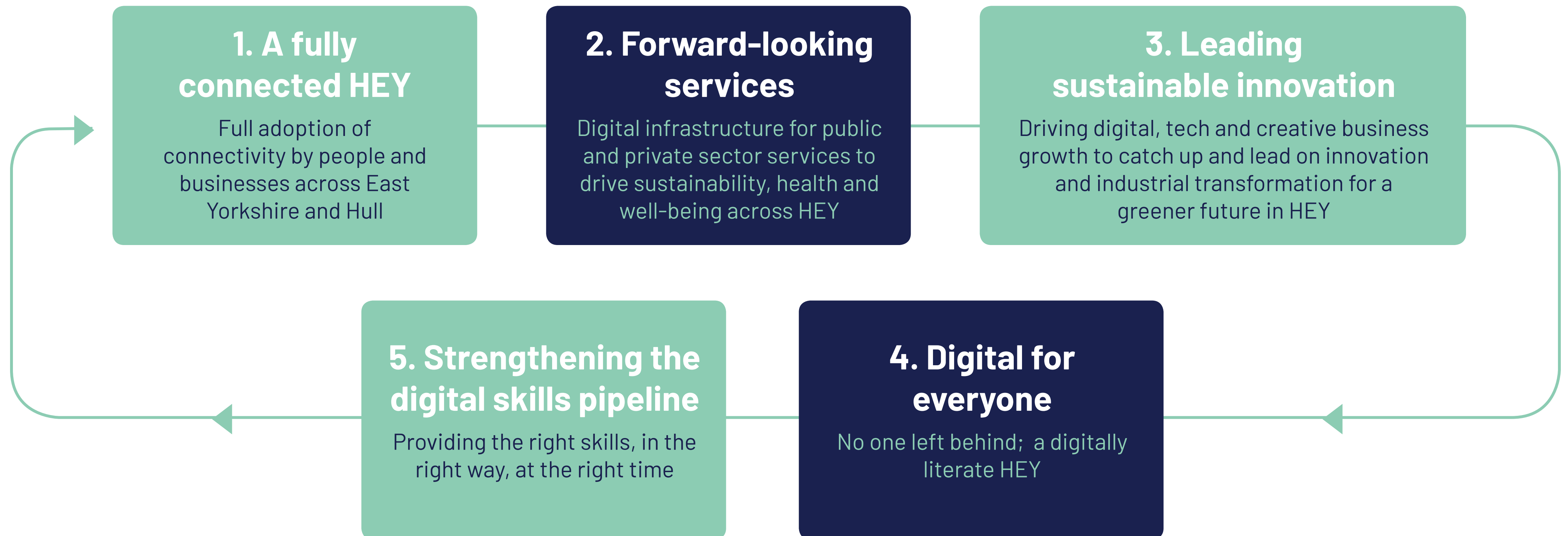
---

1. ONS, Annual Survey of Hours and Earnings 2019-22 (Workplace Analysis) / ONS, Annual Population Survey, Economic Inactivity 2019-22

2. Assessing the UK's Regional Digital Ecosystems, September 2021, Department for Digital, Culture, Media & Sport

3. ONS, UK Business Counts – enterprises by industry and employment size band change 2019-22

OPPORTUNITIES

Five opportunities underpin HEY's digital future and aspirations, and align with the priorities identified in our Economic Growth & Workplace Well-being Strategy, 2021-2026[1]

1. A fully connected HEY

Full adoption of connectivity by people and businesses across East Yorkshire and Hull

2. Forward-looking services

Digital infrastructure for public and private sector services to drive sustainability, health and well-being across HEY

3. Leading sustainable innovation

Driving digital, tech and creative business growth to catch up and lead on innovation and industrial transformation for a greener future in HEY

5. Strengthening the digital skills pipeline

Providing the right skills, in the right way, at the right time

4. Digital for everyone

No one left behind; a digitally literate HEY

1. Economic Growth & Workforce Wellbeing Strategy 2021-26, HEYLEP, 2021

OPPORTUNITIES, OUTCOMES AND ENABLERS

- The five opportunities show our aspiration, and collectively provide the platforms needed to achieve our vision for a thriving digital and tech ecosystem.

- Our co-designed enabling factors underpin the realisation of each opportunity and their associated outcomes. With inclusive growth in mind, the outcomes span a range of ambition levels.

- Our opportunities and outcomes dovetail with key themes running through the priorities set out in our Economic Growth & Workforce Wellbeing Strategy including aspirations relating to productivity, innovation, a clean growth economy, a skilled and inclusive economy and competitive, resilient places.

Humber HEY Skills Partnership

DIGITAL SKILLS PARTNERSHIP HUMBER

HEY Hull and East Yorkshire Local Enterprise Partnership

OPPORTUNITY 1:
A fully connected HEY

Outcome: Availability, affordability and access for full fibre across all of HEY, with East Yorkshire matching Hull for full fibre premises. Pockets of limited 5G coverage are addressed.

Rationale: To address existing disparities and promote fair and equitable distribution of the opportunities for people and businesses associated with being connected.

Focus: Co-ordination and planning through strong public and private partnerships to target harder to reach localities, communities and businesses, and to increase choice of provision.

Enabling a fully connected HEY

- Identify opportunities for market diversification and targeted support in areas of high deprivation and rurality, and for businesses facing barriers to digital tech adoption.

- Promote investment to support full fibre access and 5G coverage, and R&D / innovation for infrastructure development to sustain full connectivity as technology advances.

- Integrate connectivity planning with physical and spatial connectivity (including transport) to maximise accessibility and embed environmental sustainability.

OPPORTUNITY 2

Forward-looking services

Humber HEY
Skills Partnership

DIGITAL SKILLS
PARTNERSHIP
HUMBER

HEY Hull and
East Yorkshire
Local Enterprise
Partnership

OPPORTUNITY 2:
Forward-looking services

Outcome: Public and private providers delivering services digitally to HEY residents and using digital to manage public spaces and the environment.

Rationale: To help public sector and private service providers respond to global trends such as an ageing society and climate change efficiently and effectively.

Focus: Co-design digital pilots and testbeds to meet needs of service providers and communities.

Enabling forward-looking services

- Diagnose community needs, for example for innovative mobility options, better environmental monitoring or safety in public spaces.

- Scope service provider needs, for example identify the IoT devices and technology that would help in care provider settings and housing providers, and the digital services that can help Local Authorities and partners to meet diagnosed community needs.

- Identify the infrastructure (networks, hardware and software) required to support the needs of providers and communities, designed in a way to accommodate further applications in the future. Data and IoT platforms in place for providers to deliver services.

OPPORTUNITY 3

Leading sustainable innovation

Humber HEY
Skills Partnership

DIGITAL SKILLS
PARTNERSHIP
HUMBER

HEY
Hull and
East Yorkshire
Local Enterprise
Partnership

OPPORTUNITY 3:
Leading sustainable innovation

Outcome: Growth of digital, tech and creative businesses in HEY and an increase in private sector / angel investment and venture capital. The reduction of carbon emissions from HEY's major industries, and a thriving green energy sector in HEY providing sustained, skilled local employment.

Rationale: To establish a stronger digital and tech ecosystem. To decarbonise HEY's major industries in order to meet net zero, increase productivity and competitiveness, creating healthier spaces and enhancing quality of life in HEY.

Focus: Support targeting growth of and investment in digital, tech and creative businesses in HEY. HEY's major industries focus their digital and tech adoption on innovation that supports emission reductions, and further investment is secured for the green energy sector to facilitate the shift towards renewable power in HEY.

Enabling sustainable innovation

- Sector events or visits to demonstrate use cases and benefits of digital tools to different sectors in HEY.

- Events and promotional initiatives to highlight the opportunities for investing in HEY.

- Collaboration between businesses / industries with similar productivity and sustainability challenges, to adopt a challenge-based innovation approach.

- R&D and investment in innovation to identify the most efficient approaches and technologies to solve challenges.

- Industries with challenges collectively engage with HEY's tech and digital businesses to design digital solutions.

- Utilise the Yorkshire and Humber Made Smarter programme and other business support programmes to help drive digital adoption in HEY's manufacturing and engineering SMEs, and to promote growth of digital and tech businesses.

OPPORTUNITY 4

Digital for everyone

Humber HEY
Skills Partnership

DIGITAL SKILLS
PARTNERSHIP
HUMBER

HEY

Hull and
East Yorkshire
Local Enterprise
Partnership

OPPORTUNITY 4:
Digital for everyone

Outcome: All HEY residents achieve a basic level of digital literacy.

Rationale: To ensure that no one is digitally excluded from the workforce or from accessing public and private services.

Focus: Expand digital literacy provision, making it fully accessible and achievable for young people and adults in all of HEY's communities.

Enabling digital for everyone

- Establish a diverse basic digital skills offer with more online, out-of-hours, shorter course and in-community provision to address all learner needs.

- Raise awareness and increase rates of adult learning and CPD engagement for digital literacy offering progression to intermediate and higher level digital skills pathways amongst adults e.g. via prioritisation of the local Adult Education Budget.

- Promote and scale up community engagement and digital inclusion initiatives, including the KCOM Learning Zone and Hull Learning Consortium.

OPPORTUNITY 5

Strengthening the digital skills pipeline

Humber **HEY**
Skills Partnership

DIGITAL SKILLS
PARTNERSHIP
HUMBER

HEY Hull and
East Yorkshire
Local Enterprise
Partnership

OPPORTUNITY 5:
Strengthening the digital skills pipeline

Outcome: Digital, tech and creative businesses can access the skills they need for growth. Young people are inspired to pursue digital careers and can access the digital and technical skills they need to progress to local, skilled digital career pathways. Those already in work have the opportunities they need to re-skill and up-skill to keep pace with digital and technological change and help drive innovation.

Rationale: To strengthen collaboration between local digital and tech businesses and education and training providers, facilitating new and innovative provision and ensuring the supply of skills meets employer demand.

Focus: Business-provider co-designed and co-delivered education and training that meets current and future skills needs.

Enabling a stronger digital skills pipeline

- Embed and expand employer-led technical pathways for digital and green energy at Levels 3 to 6 and up-skilling / re-skilling opportunities via T Levels, Higher Technical Qualifications, FE / HE-business collaboration and skills academies.

- Digital and green energy sector experts are trained to co-deliver (co-teach) in FE.

- Scale up activities to inspire young people and their families from all backgrounds, from primary phase upwards, to study

facilitating STEM subjects including Computer Science, and raise awareness of local career opportunities with targeted teacher CPD and careers education, information, advice and guidance (CEIAG).

- Address barriers to young people accessing and businesses (SMEs) engaging with apprenticeships.

Mapping the opportunities and focus of the enablers

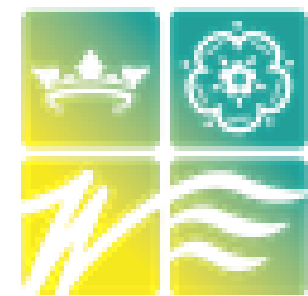| 1. A fully connected HEY	2. Forward-looking services	3. Leading sustainable innovation	4. Digital for everyone	5. Strengthening the digital skills pipeline
Co-ordination and planning through strong public and private partnerships to target harder to reach localities, communities and businesses, and to increase choice of provision. This will address existing disparities and promote fair and equitable distribution of the opportunities for people and businesses associated with being connected.	Co-design digital pilots and testbeds for needs of service providers and communities to help public sector and private service providers respond to global trends such as an ageing society and climate change efficiently and effectively.	Support for digital, tech and creative business growth and initiatives aimed at promoting private / angel investment and venture capital in HEY. HEY's major industries focus digital / tech adoption on innovation for emission reductions, and investment is secured for the green energy sector for a shift towards renewable power in HEY. This will decarbonise HEY's major industries to help meet net zero, increase productivity and competitiveness, creating healthier spaces and enhancing quality of life in HEY.	Expand digital literacy provision, making it fully accessible and achievable for young people and adults in all of HEY's communities to ensure that no one is digitally excluded from the workforce or from accessing public and private services.	Business-provider co-designed and co-delivered education and training that meets current and future skills needs to ensure local digital, tech and creative businesses can access the skills required for growth.

STRATEGIC DEVELOPMENT FUND 2 PARTNERS