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Gloucestershire County Council
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Snapshot: Expressions of Urban – Peri-Urban – Rural Relationships

Cyber security in Gloucestershire

Gloucestershire, UK

1. Brief Description

Gloucestershire is a rural county in south-west England. Cyber security is an increasingly important economic business sector for Gloucestershire and within the UK economy. Cyber security is the technology and mechanism which allows us to operate securely within the digital world in terms of business, commerce and our private lives, and everyone engages on a daily basis with cyber infrastructure (in particular the internet) through for example work, leisure, shopping, banking, social media; and this engagement needs to be secure. Nationally the UK economy uses cyber infrastructure for business, finance, and to run government and all that this entails. The UK government has recently published the National Cyber Security Strategy to support the high importance placed on this sector and the challenges and opportunities ahead.[i] Within the UK, the cyber security market is growing and strongly tied to the ICT Sector.

Within Gloucestershire, the high-profile importance of cyber security to the county has been recognised by government, with £22million of funding being allocated to the Gloucestershire Local Enterprise Partnership (LEP), to spend on transport/highway infrastructure to enable the development of a Cyber Business Park on the outskirts of Cheltenham.[ii] This investment originates from the UK government's Growth Fund, which is designed to support the local economy. The Cyber Park will be a joint public and private sector initiative to support the growth and development of new cyber security businesses, technology, research and skills. [iii] (Note: Local Enterprise Partnerships, or LEPs, are economic partnerships established by the UK government to support and encourage growth in their local economy).

2. Questions and/or Challenges

A 2013 study commissioned by government, 'Competitive analysis of the UK Cyber Security Sector', examined the UK's cyber security industry and its supply sector.

The report highlights key issues including the main cybersecurity threats, and identifies four main areas of the sector within the UK:

- Defence and intelligence
- Government (apart from defence and intelligence)
- Commercial enterprises/businesses
- Small and medium sized businesses (SMEs) and consumers

The study makes recommendations to the UK government and to those suppliers to the cyber security market.[iv]

The Government's Communications Headquarters (GCHQ) is based in Cheltenham, in the urban centre of Gloucestershire. In 2016, the National Cyber Security Centre (NCSC) was launched, the UK's authority on cyber security and a part of GCHQ. [v] Within Gloucestershire, GCHQ is a major government employer with strong working links to government departments, other local businesses and beyond the county boundaries.

Gloucestershire is also home to one of the country's leading defence companies, BAE Systems. Neighbouring counties beyond the Gloucestershire County boundary contain a cluster of cyber security suppliers. The Government through the Department of Business Energy & Industrial Strategy has recently sponsored a Science and Innovation Audit report, on behalf of the Cyber Resilience Alliance group. This consortium includes GFirst LEP (the Local Enterprise Partnership for Gloucestershire) and three partner LEP areas which adjoin the north and south boundaries of the county. Final reports are yet to be published.[vi]

Gloucestershire Questions/Challenges

> Given the various levels of cyber security operation (local infrastructure, regional co-operation, national priority), to what extent does this form of 'regional' SMART development have an impact on the rural economy and communities? How will local rural residents and businesses participate in, contribute to and benefit from this growing sector? How relevant are urban-rural governance considerations for this form of SMART development?

> How can the rapidly developing needs of the national and regional cyber economy support Gloucestershire's objectives to retain and train young professionals in the county for the future?

> Whilst cyber security is a new and rapidly developing economic sector, how can the evolving economic data and information be captured and monitored?

3. Main Insights

3.1. Indications of the application of the new concept of 'New Localities'

The new Cyber Park will be located in north Cheltenham, in the urban central vale of the county and have good access to the road/motorway network. Significant investment to improve the transportation network will support this large 45 hectare site of, which intends to accommodate a range of businesses, from start-ups to larger organisations.[vii] This site will deliver new jobs for local people, but will also be accessible for those travelling from outside the area via the M5. This site has been nationally recognised as important. The Economy of Gloucestershire 2017[viii] states that 83% of Gloucestershire residents also work in the county, showing the reliance on county jobs by county residents from both rural and urban areas.

There has been substantial infrastructure investment in the last few years to enable superfast broadband (30 mbps) to be available to 97% of the county. In fact, some of the rural areas (e.g. Cotswold District) have some of the best ultrafast connectivity in the county. See Fastershire website for further information.[ix] Therefore, how can we use this connectivity to support the cyber security expansion?

A new network of growth hubs across the county has been implemented at particular locations; including each of the 31 county council libraries acting as a Tier 3 Growth Hub providing information, advice, guidance and a signposting service. So residents and businesses located outside the major settlements can still access information locally.

Gloucestershire has an aging population and a flow of young people both in and out of the county to work and train or study. This has been emphasised in the recent Glos2050 conversation taking place across the county as a potential cause for concern.[x]

The University of Gloucestershire has recently expanded its premises and training provision to allow additional students to study cyber security, with University premises now situated at Berkeley (C11 Cyber and Digital Centre). The Gloucestershire Science and Technology Park facility is located on the banks of the River Severn at a now regenerated former nuclear power station site. The Berkeley site is in the south of the county, within easy reach of Bristol and offers cyber/digital training, plus access controlled secure workspace for the Gloucestershire cyber community to work, learn and network.[xi] A four-year degree apprenticeship in cyber security has also been announced.[xii]

3.2. Insights related to the broad area of 'Smart Development'

The Gloucestershire LEP Strategic Economic Plan (SEP) highlights Knowledge Intensive services including the ICT sector (particularly cyber security and creative industries, including digital media see SEP page 44). The SEP also states that the county has *"…an abundance of SMEs in cyber security and creative industries, including digital, all of which have high growth potential; …"* (SEP page 7)[xiii]

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The LEP for Gloucestershire has a range of business groups which involve business members from important sectors of the local economy; and has recently established a Cyber Security Business Group. This group has several objectives: to work with the Scheme Promoter of the Cheltenham Cyber Park, to support small and medium enterprises (SMEs), and to foster links between SME suppliers to develop their reach and knowledge in the cyber security sector. [xiv]

The National Cyber Awards will be held in Cheltenham on 14 November 2018, with awards recognising achievement in the following areas:

> Innovation and cutting-edge cyber solutions for business benefit and national defence

> The reduction of Cyber Crime both against business and the individual

> Outstanding individuals in the Cyber sector and unsung heroes.

These local and national initiatives clearly show the importance placed on both arenas and the roles that Gloucestershire partners, such as the LEP, play.

The Cyber sector is intrinsically linked to ICT and, whilst data for the cyber sector is currently difficult to obtain, we do have information about ICT with Gloucestershire.

ICT Sector in Gloucestershire

To provide some context for the ICT sector in Gloucestershire, we have used the Organisation for Economic Co-operation and Development (OECD) definition of the ICT sector which defines it as *"a combination of manufacturing and service industries that capture, transmit and display data and information electronically"*.

Using this definition there are around 2,385 Gloucestershire businesses in the ICT sector which accounts for around 7.1% of total businesses. Of ICT businesses in the county 74% are in areas classed as Urban city and Town, 9% are in areas classes as rural and town fringe, and 17% are in areas classed as Rural Village and Dispersed (Source: UK Business Counts (2017), ONS).

There are around 12,000 people in employment in ICT within the county, accounting for 4.1% of total employment. Of these 12,000 people, 80% are located in areas classed as Urban city and town, 5% are in areas classed as rural town and fringe and 15% are in areas classed as rural village and dispersed (Source BRES (2016), ONS).

Finally we should recognise that infrastructure such as high speed broadband has a crucial role to play in facilitating the cyber sector and cyber security for users, particularly for rural residents and businesses. The Fastershire Broadband project is currently being delivered through a partnership between Gloucestershire County Council and Herefordshire Council.[xv] (Please refer to Governance and Planning example on Gloucestershire LEP and section 3.1 above.)

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3.3. Other insights that could be relevant for further work

The UK government recognizes that one of the key barriers to growth in this sector concerns skills. There are low numbers of experienced professionals, and acknowledged shortages in STEM skills (Science, Technology, Engineering and Maths) which is why these are prioritised through for example the Local Growth Deal funding. In Gloucestershire for example Cirencester College, Gloucestershire College and Hartpury College have received growth deal funding to invest in STEM skills training provision.

The University of Gloucestershire has recently introduced a four year degree apprenticeship in cyber security. See above.

4. Data Sources and Indicators

Name of Indicator / Data	Source (citation, website link, organization)
Competitive Analysis of the UK Cyber security sector, Department for Business, Innovation and Skills 2013,	https://www.gov.uk/government/publications/cyber-security-competitive-analysis-of-the-uk-sector
Definition of ICT	OECD (Organisation for Economic Co-operation and Development)
Number and location of ICT businesses in Gloucestershire	UK Business Counts (2017) Office for National Statistics
Number of people employed in ICT within Gloucestershire and location of these jobs	BRES (2017) Office for National Statistics
ICT Skills and job vacancy information	Labour Insight, Burning Glass

5. Critical Appraisal of Data Use

Data for the cyber security sector in the UK is difficult to find, collate and analyse due to the standard industrial classification codes which were last updated in 2007. This is compounded by the fact that cyber security is a fairly recently established and rapidly changing sector of the economy. Some data/information is available about ICT which is a closely related area. Please refer to information above.

ICT skills are now an element of most jobs, however in 2017 there were 13,752 jobs advertised for occupations directly related to IT, representing 14% of job vacancies where the occupation is known. In Gloucestershire, the most commonly advertised ICT related occupation was Programmers and software development professions with 5,575 vacancies, this was also the most commonly advertised vacancy of all occupations. (Source Labour Insight, Burning Glass)

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Over the coming years the increasing computerisation means that many current jobs will be at risk. Research suggests that of those job vacancies advertised in Gloucestershire in 2017, 15.7% are at high risk of automisation over the next 20 years. (Source Labour Insight, Burning Glass).

6. References

[i] *National Cyber Security Strategy 2016-2021*

https://www.gov.uk/government/publications/national-cyber-security-strategy-2016-to-2021

[ii] *Case study information on GFirst LEP website*

https://www.gfirstlep.com/case-studies/cheltenham-cyber-park/

[iii] https://www.cheltenham.gov.uk/news/article/1863/22_million_secured_for_cyber_hub_through_partnership_work

[iv] *Competitive Analysis of the UK Cyber security sector, published 2013,* https://www.gov.uk/government/publications/cyber-security-competitive-analysis-of-the-uk-sector

[v] https://www.ncsc.gov.uk/

[vi] *Cyber Resilience Alliance audit*

https://www.herefordshire.gov.uk/news/article/534/cyber_security_science_and_innovation_audit

[vii] *Cyber Park website* http://www.cyberpark.co.uk/

[viii] *The Economy of Gloucestershire 2017*

https://inform.gloucestershire.gov.uk/media/1520759/economy_of_gloucestershire_2017-35.pdf

[ix] http://www.fastershire.com/

[x] https://glos2050.com/

[xi] *University of Gloucestershire, Berkeley Green* https://c11-berkeley.glos.ac.uk/

[xii] http://www.glos.ac.uk/business-and-partnerships/Pages/higher-apprenticeship-cyber-security.aspx

[xiii] *GFirst LEP Strategic Economic Plan, 2014. Scroll down to end of page.*

https://www.gfirstlep.com/about-us/our-vision/strategic-economic-plan/

[xiv] *Cyber Business Group* https://www.gfirstlep.com/about-us/business-groups/

[xv] *Fastershire website* http://www.fastershire.com/

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