Smart Technology & the Urban-Rural Digital Divide

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Peak District Partnership
5th Annual Think Tank
Friday, September 13th, 2024

The Benefits of Digital Transformation

"Digital transformation offers huge potential. Econometric evidence suggests that digital transformation has **positive impacts on economic growth and market outcomes**. From a governance perspective, digital transformation **holds the potential to enhance transparency and accountability, limit bureaucracy, corruption, tax avoidance, and facilitate citizens' interaction with their governments**. For a society, it holds a promise to **improve the provision of health and education services, facilitate social inclusion and communication, and improve well-being**. Finally, digital transformation may **positively impact environmental sustainability by smarter waste management and handling, pollution prevention and control, and sustainable resource management**."

Digital Regulation Platform: https://digitalregulation.org/

What Technological Future is Awaiting Us?

The Future City: 18 Smart-City Technologies That Will Genuinely Improve Urban Living

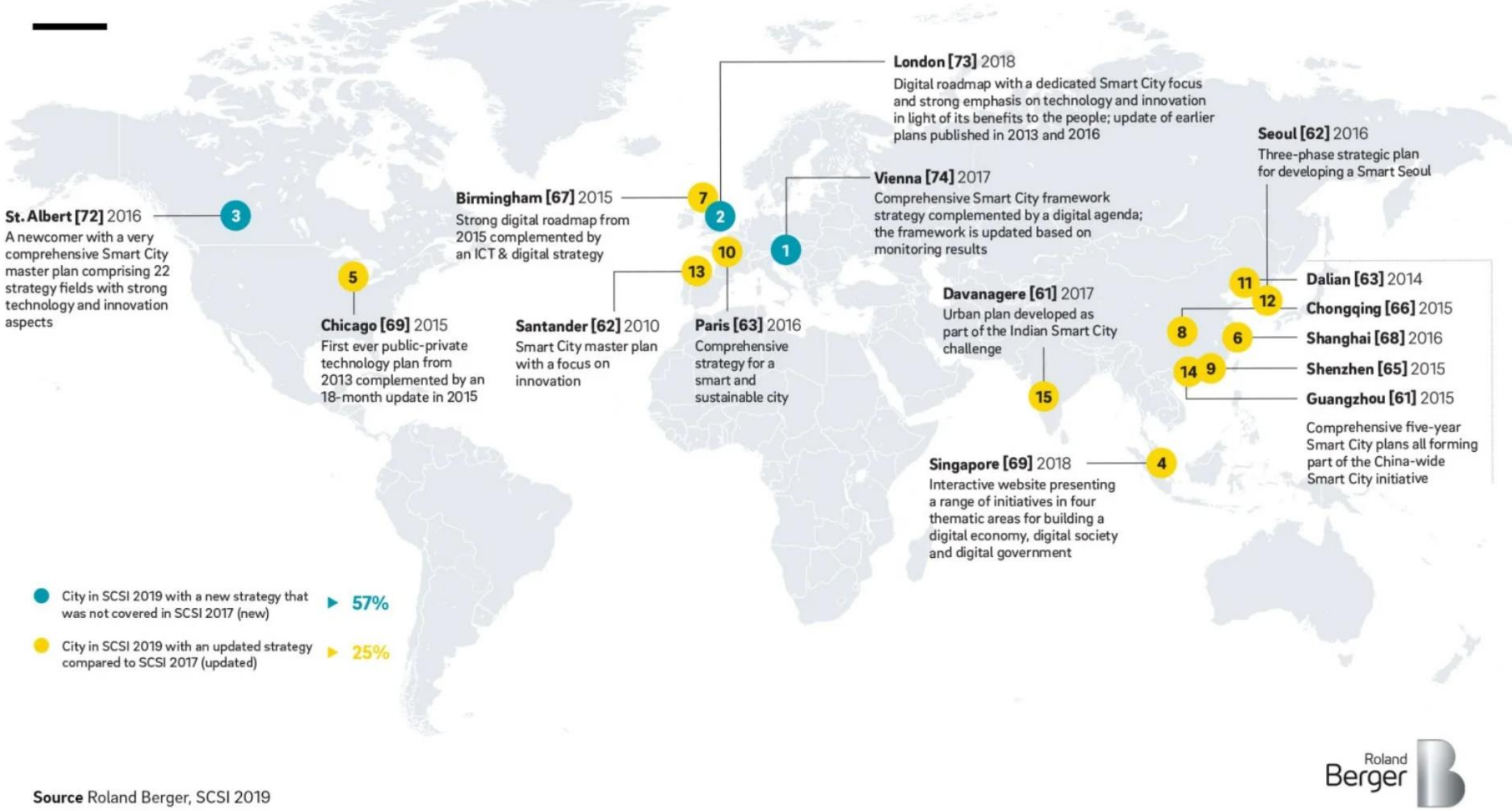
1. Integration of IoT Devices With AI-Driven Traffic-Management Systems
2. Autonomous Vehicles
3. Ubiquitous 5G Access
4. Energy Monitoring & Testing
5. Smart Energy Grids
6. Integration of Distributed Energy Resources With Clean-Energy Systems
7. Fleet-Tracking Technology
8. Widespread Collection of Big Data
9. Observability As A Service
10. Low-Power, Low-Cost Wireless Sensors For Infrastructure Management
11. Localised Solar Power & Solar Energy Storage
12. Fully Connected, City Specific Traffic Networks
13. Multifunctional Robots
14. Blockchain-Based Tech
15. Smart Parking
16. Improved Train Transit
17. Outpatient Health Kiosks
18. AR-Powered Public Service Information

Forbes: 05-06-2023 (https://www.forbes.com/sites/forbestechcouncil/2023/06/05/18-smart-city-technologies-that-will-genuinely-improve-urban-living/)

What Technological Future is Awaiting Us?

The Future City

15 smartest cities around the world



Source Roland Berger, SCSI 2019

Roland Berger

https://www.rolandberger.com/en/Insights/Publications/Smart-City-Strategy-Index-Vienna-and-London-leading-in-worldwide-ranking.html#!#&gid=1&pid=2

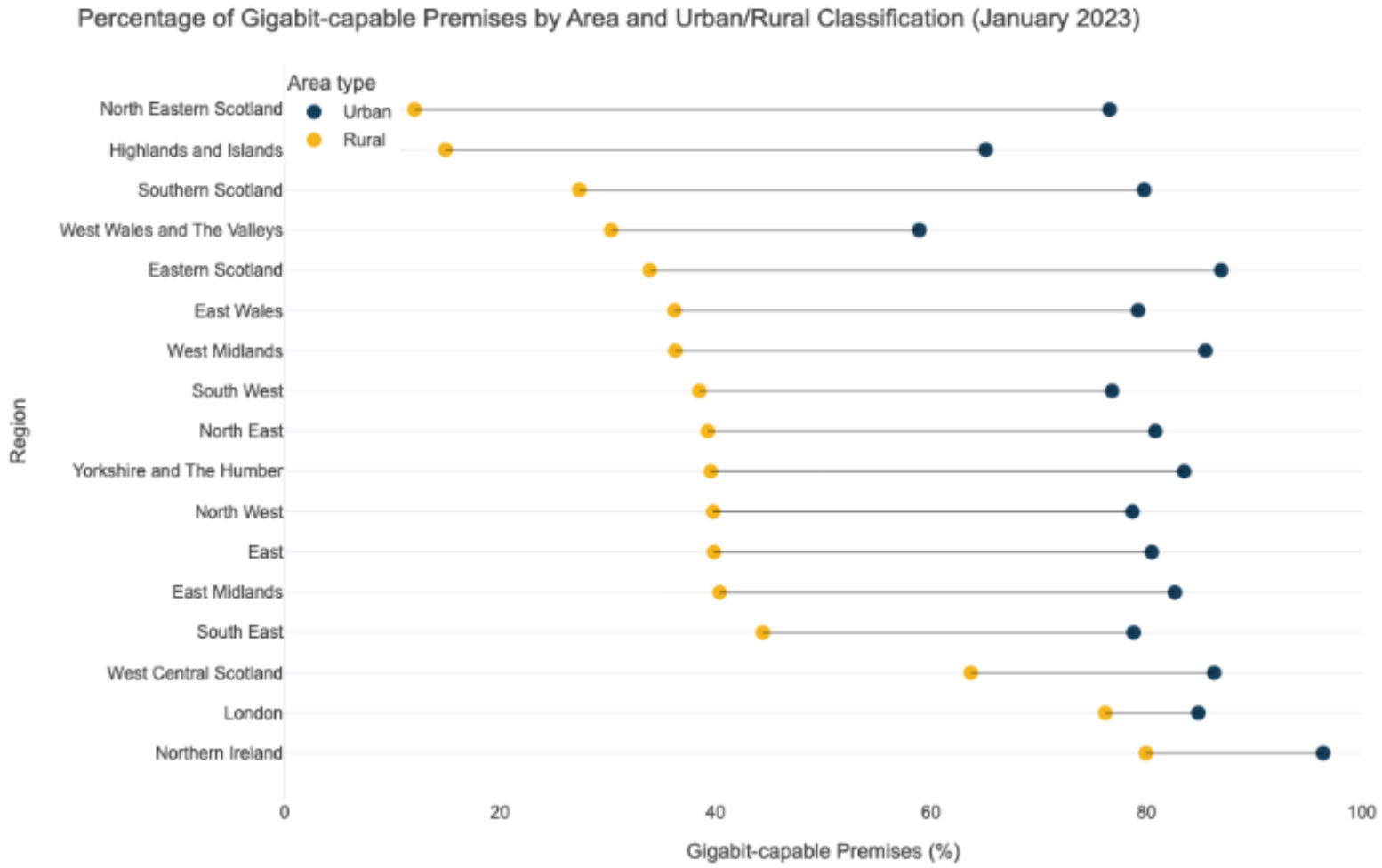
What Technological Future is Awaiting Us?

The Future Rural Environment

"While Smart City is progressively becoming a reality and a successful model for integrating Smart Technology into different aspects of everyday life, its effective application in a rural context according to a Sustainable Development approach is not yet completely defined."

Source: Alabdali, S.A., Pileggi, S.F. & Cetindamar, D. (2023) "Influential Factors, Enablers & Barriers to Adopting Smart Technology in Rural Regions: A Literature Review" ***Sustainability*** *2023, 15, 7908. https://doi.org/10.3390/su15107908*

The Urban-Rural Digital Divide



Ofcom's Connected Nations update: Spring 2023 as reported via:
https://www.scotlandis.com/blog/connected-nations-spring-2023-the-rural-urban-digital-divide-continues/

Delivering a Fit for Purpose Technological Future

The Future Rural Environment: Characteristics to be taken into Consideration

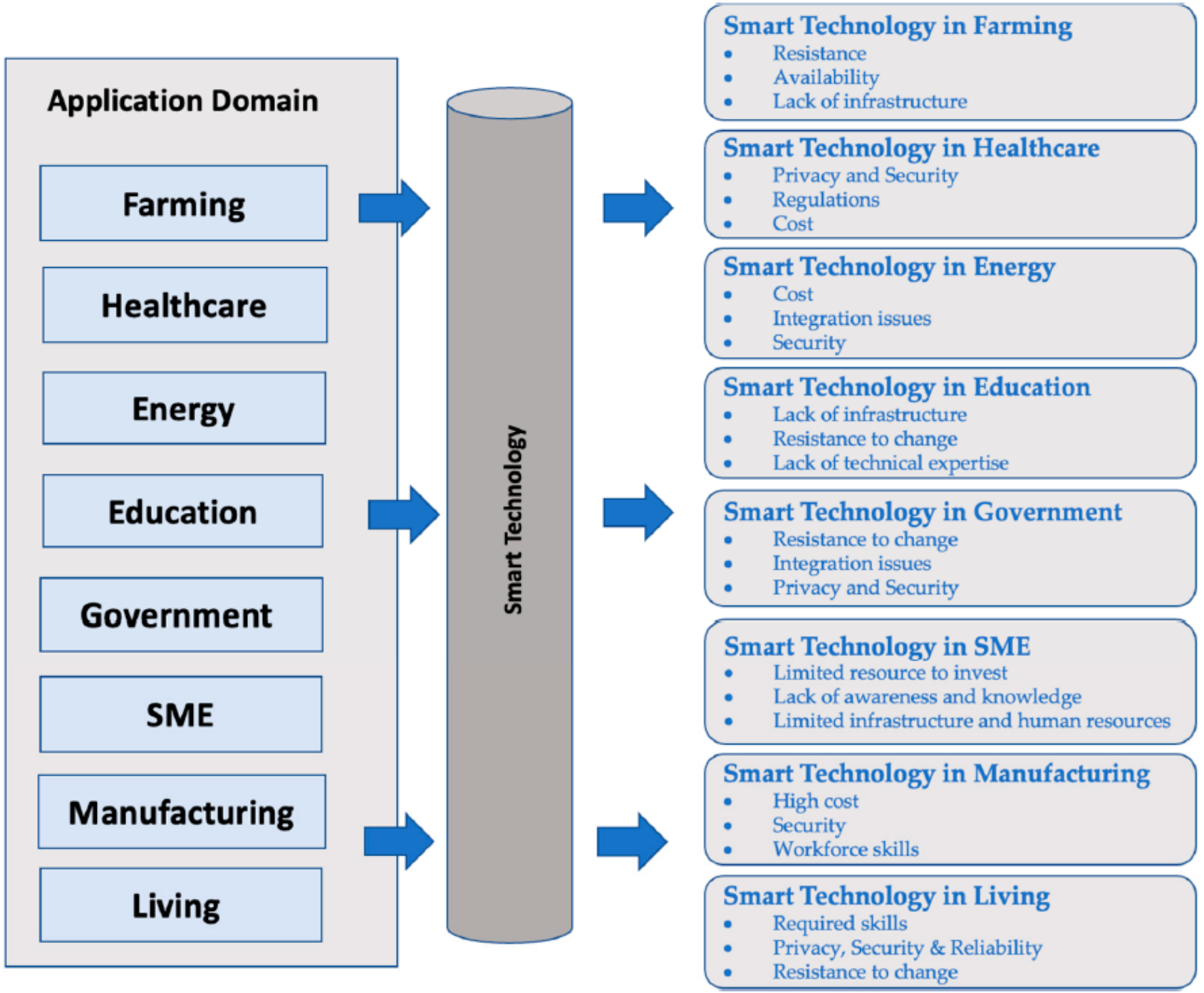
1. Geography/Topography
2. Demographic Profile & Population Distribution
3. Infrastructure – Digital, Transport etc
4. Economy & Business Sectors/Types
5. Healthcare Supply & Demand
6. Education Supply & Demand
7. Lifestyle & Social Environment

Source: Alabdali, S.A., Pileggi, S.F. & Cetindamar, D. (2023) "Influential Factors, Enablers & Barriers to Adopting Smart Technology in Rural Regions: A Literature Review" ***Sustainability*** *2023, 15, 7908. https://doi.org/10.3390/su15107908*

Delivering a Fit for Purpose Technological Future

The Future Rural Environment: Opportunities for Innovation

1. **Smart Farming** – aims to mitigate human intervention by automating the agricultural process
2. **Smart Healthcare** – aims to improve the efficiency & quality of services
3. **Smart Energy** – aims to optimise energy production, distribution and consumption to create more sustainable and reliable energy systems.
4. **Smart Education** – aims to enhance effective, suitable and sustainable learning approaches through innovative methods for more effective outcomes.
5. **Smart Government** – aims to enhance the efficiency of government services, performance & responsiveness.
6. **Smart SMEs** – aims to optimise the daily business operations, services and production.
7. **Smart Manufacturing** – aims to automate operations, reduce costs and increase productivity.
8. **Smart Living** – aims to improve lifestyle so that it is more convenient, efficient and sustainable.



Delivering a Fit for Purpose Technological Future

The Future Rural Environment: <u>Barriers to Change</u>

Source: Alabdali, S.A., Pileggi, S.F. & Cetindamar, D. (2023) "Influential Factors, Enablers & Barriers to Adopting Smart Technology in Rural Regions: A Literature Review" ***Sustainability*** *2023, 15, 7908. https://doi.org/10.3390/su15107908*

What is being done to deliver a Smart-Enabled Future for Rural Communities?

BUSINESS PEAK DISTRICT

A Global/International Perspective

United Nations SUSTAINABLE DEVELOPMENT GOALS

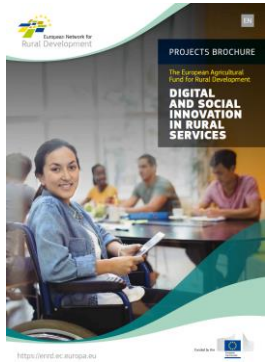
"Regional growth is considered within the framework of the Smart Sustainable Development model. It implicates the introduction of digital technologies, smart management, and integrated innovations together with the active involvement of the population"[1].

Interreg Europe
European Union | European Regional Development Fund

Digital Regions – "how to best adapt innovation policies to support smart specialisation in the manufacturing sector as a result of the emergence of INDUSTRY 4.0. "

European Network for Rural Development

The European Agricultural Fund for Rural Development has a focus on digital and social innovation in rural services



1. *Demin, S., Mikhaylova, A. & Pyankova, S.* ***International Journal of System Assurance Engineering Management*** *(February 2023) 14(1):377–390*
2. *Interreg Europe, Digital Regions: I4.0 Policy White Paper (https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1662563471.pdf)*
3. *Interreg Europe Tourbo project (https://www.interregeurope.eu/tourbo)*
4. *European Network for Rural Development (https://ec.europa.eu/enrd/home-page_en.html)*

What is being done to deliver a Smart-Enabled Future for Rural Communities?

A UK Perspective

Department for Culture Media & Sport

2020

2022

Policy paper
UK Digital Strategy
Updated 4 October 2022

"We are enabling better access to the benefits of digital technologies across the whole of the UK, improving productivity and inclusion by funding the adoption of cutting-edge technologies by businesses in every region to accelerate productivity growth."

https://www.gov.uk/government/publications/uks-digital-strategy/uk-digital-strategy#digital-foundations

What is being done to deliver a Smart-Enabled Future for Rural Communities?

A Peak District Perspective

https://www.digitalderbyshire.org.uk/home.aspx

August 2021: More than 67,000 rural homes and businesses across Derbyshire are to get next-generation gigabit broadband as part of government plans to level up internet access across the UK.

April 2023: Building Digital UK have released the latest Project Gigabit update. Derbyshire is now in procurement with contracts set to be awarded by the end of the calendar year.

December 2023: The UK government's £5 billion Project Gigabit broadband scheme has announced that Connect Fibre has been awarded the regional supplier (type B) contract worth £33 million to connect over 17,000 premises in Derbyshire to gigabit capable broadband.

February 2024: The local supplier (type A) contract covering High Peak & the Derbyshire Dales has a contract value of £10.7m and will cover 4,700 premises. This will be awarded at the end of February.

February 2024: A **Digital Derbyshire Strategy** is in draft form. It is going to be approved in Feb/March to be formally approved and adopted. This is again about increasing digital uptake across Derbyshire and using the Council's assets to aid its roll out.

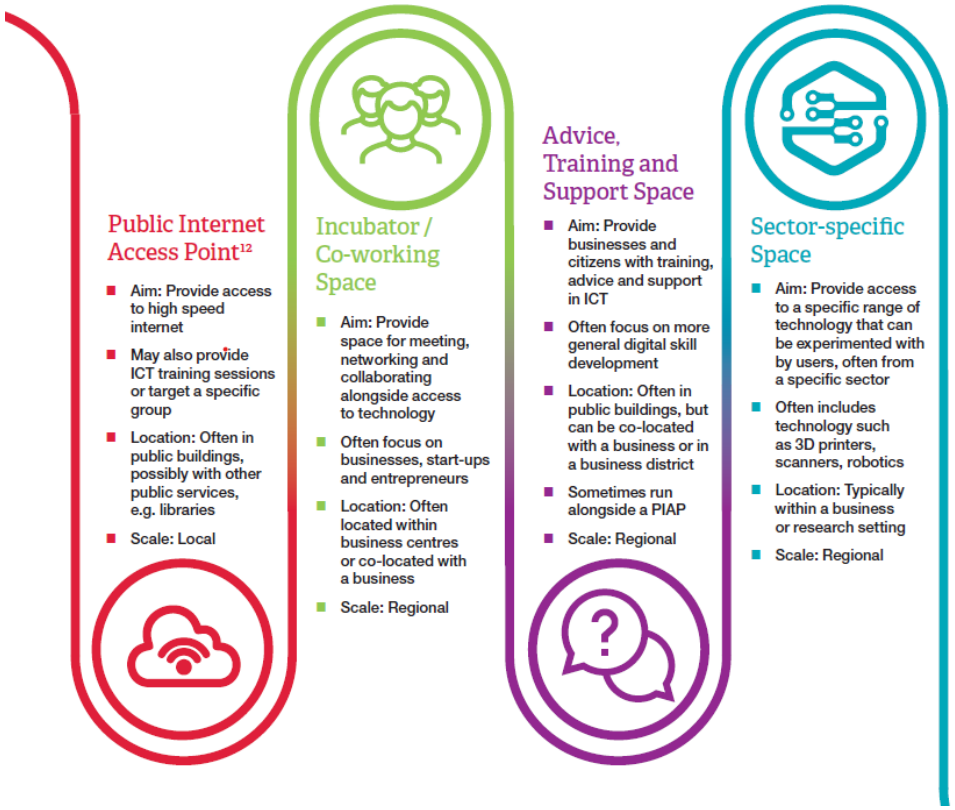
Smart-Enabled Rural Communities - The Approach

1. Continue to work towards broadband infrastructure provision targets until every last household is connected.
2. Acknowledge the stage companies are at in their digital journey.
3. Frame digitalisation in a way that small enterprises in rural areas can relate to.
4. Take an individualised approach that generates a dialogue between technical experts and experts in traditional industries.
5. Develop locally-anchored initiatives to support SMEs in rural areas to engage with digitalisation.
6. Focus on the development potential digitalisation presents.
7. Work collaboratively with the local community to address the implications of increased digital media attention for tourism sites.
8. Take a company-centred approach and promote mutually beneficial collaboration.
9. Create opportunities for cross-border collaboration between participants in successful locally-driven digitalisation initiatives.

https://norden.diva-portal.org/smash/get/diva2:1429460/FULLTEXT02.pdf

Smart-Enabled Rural Communities – Digital Hubs

Digital hubs are physical spaces with access to superfast broadband alongside community and business focussed services. They provide digital connectivity, support the development of digital skills and encourage the use of emergent digital technologies.



https://ruraldigital.eu/wp-content/uploads/2020/01/CORA_Digital_Hub_Guide_14.01.2020.pdf

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