

Rural Broadband: Call for Evidence

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This paper draws together evidence from a studies undertaken by researchers at the University of Lincoln on broadband delivery, business use of broadband, and the digital economy in rural areas. This body of work dates from 2007, and includes peer reviewed publications, empirical studies, and evaluations of local government policy. The summary points below are divided into sections relating to: (i) solutions for broadband infrastructure delivery in rural areas; (ii) encouraging use of broadband by businesses in rural areas; (iii) fostering the digital economy in rural areas.

1. Solutions for broadband infrastructure delivery in rural areas

- Evidence from the Netherlands has highlighted that **allowing the private sector to provide infrastructure to accessible rural areas and exclude outlying farmsteads and hamlets is not cost effective**, as now the cost of reaching the outliers is much greater. A paper by researchers at the Universities of Groningen and Lincoln¹ identifies that sectioning territories to ensure that providers have sufficient profitable territory to subsidise local outliers could be effective.
- In response to the problem above, local communities in the Netherlands have come together to demonstrate that there is sufficient demand for private sector companies to provide the services. This **“demand bundling”** is part of an 8-stage process, identified in our paper, where communities and internet providers can work together to provide local rural broadband.
- The **8 stages of rural broadband deployment**² are:

Stage 1: Incentive

Recognition of the problem, i.e. poor broadband provision

Stage 2: Familiarization

Introduction to the actors and issues of rural broadband deployment

Stage 3: Inventory of demand

Assessing the potential demand in the target area

Stage 4: Campaigning

Campaigning in order to reach the target percentage of subscribers

Stage 5: Bundling demand

Formally bundling the demand (subscriptions) and forming the business case

Stage 6: Tender and contracting

Compose a tender based on the business case and formally contracting company for the deployment

Stage 7: Construction and commissioning

Process management of the construction as the commissioning party

Stage 8: Management and maintenance

Managing the network (cooperative) and outsourcing the maintenance

¹ Salemink, K., Strijker, D. & Bosworth, G. (2017) “The community reclaims control? Learning experiences from rural broadband initiatives in the Netherlands” *Sociologia Ruralis*

² Salemink, K., Strijker, D. & Bosworth, G. (2017) “The community reclaims control? Learning experiences from rural broadband initiatives in the Netherlands” *Sociologia Ruralis*

- **Community enterprise initiatives can be effective for isolated rural communities**, as identified in a paper by Salemink et al³ and Ashmore et al⁴. As a response to market and regulatory failures, many communities have formed initiatives to deliver their own broadband infrastructure.
- The prevailing free-market rationale of the last few decades has left governments with limited power and possibilities to solve the problem. As an outcome of national, federal, and European legislation, the interests of market parties take the leading role when it comes to stimulating investment and provision. In fear of legal and/or financial repercussions (e.g. State Aid rules) **governments are wary of coming into conflict with telecommunication companies over programmes and policies that go against market interests**
- **Lincolnshire County Council is a rare example of a local authority that has used ERDF funds to invest directly in wireless broadband.** In 2013, it contracted a local company, AB Internet, to provide broadband via wireless access points to two areas (one rural, one coastal) identified as least likely to receive investment through the BDUK infrastructure upgrades scheduled with BT. The service allowed users to receive speeds of up to 50mbps. The University of Lincoln's evaluation of this initiative highlighted that **it is the first project in the UK to receive State Aid approval for wireless delivery** under BDUK⁵.
- The Universities of Lincoln and Groningen are partners in a **new three year Interreg project, CORA** (Connecting Rural Areas with Digital Infrastructure and Services)⁶. This will **explore and test solutions for delivery of superfast broadband to the most rural and remote areas of the Europe's North Sea Region**, including consideration of co-delivery of utilities, and community enterprise initiatives. The project will start with a survey of regional authorities to identify existing approaches, the findings of which will be of interest to this Call for Evidence. The next CORA meeting will be hosted in Lincoln in Spring 2018, and we would be delighted to invite policymakers to this.

2. Encouraging use of broadband by businesses in rural areas

- The experience in Lincolnshire is that **provision of superfast broadband is only useful if businesses know how to use it**. In order to encourage take-up and enable businesses to realise its full potential, there is a need to accompany superfast broadband supply with a programme of training and business support.⁷
- **Lincolnshire County Council developed 5 "Technology Hubs" to allow businesses to access training and try out new technologies** (e.g. 3-d printers, advanced high-speed cameras, virtual reality technology) before making major investments. These pilot projects demonstrated the potential for co-locating training, technology and business networking activities centred on internet technology but more needs to be done to turn them into sustainable, self-funding models. The CORA project is working on concept of digital hubs and extends the trialling of "hubs" to include more social/community facilities.

³ Salemink, K., Strijker, D. & Bosworth, G. (2017) "The community reclaims control? Learning experiences from rural broadband initiatives in the Netherlands" *Sociologia Ruralis*

⁴ Ashmore, Fiona, Farrington, John & Skerratt, Sarah (2015) Community-led Broadband in Rural Digital Infrastructure development: Implications for resilience. *Journal of Rural Studies* 54, 408-425

⁵ Price, Liz and Shutt, Jim (2015) *Evaluation of 'An Online Revolution'* Project Report, undertaken by University of Lincoln for Lincolnshire County Council

⁶ More details on CORA can be found at: <http://northsearegion.eu/cora/>

⁷ Price, Liz and Shutt, Jim (2015) *Evaluation of 'An Online Revolution'* Project Report, undertaken by University of Lincoln for Lincolnshire County Council

- Research by the University of Lincoln⁸ into business support activity delivered by Onlincolnshire, including training workshops, 1:1 support and Technology Hubs, identified the following success factors:
 - The need for ***tailored and differentiated support*** to ensure that SMEs can access expertise to address their needs and specific problems within their business.
 - The need for a ***flexible approach to the allocation of time*** to each SME. Funding rules, such as those that apply to European funding, do not always allow for a flexible approach to time allocation, however.
 - Whether support is delivered as training or 1:1 advice, SMEs benefit from ***access to the right expert***. Trainers and advisors who can offer a blend of both ICT- *and* business-related support are better able to advise SMEs on how broadband-related technology can help to achieve their business model.
 - Providing ***access to new technology*** is a key a feature of interventions that bring about improved use of ICT within the business. This can be grant funding to enable SMEs to embed new technology within their business, or technology that can be accessed in a shared space such as a Technology Hub.
- In 2013, academics from Lincoln Business School engaged directly in a collaborative project to support SMEs in their use of broadband technology⁹. Lessons from this project include:
 - Giving ***a clear message about why SMEs need to engage in technology***, e.g. changing the branding from “superfast broadband” (the project focus for our funders) to “engaging in the digital economy”. Rather than focusing on the tool/technology, focusing on the competitive realities for business was more effective.
 - ***Don’t assume that “digital is best”*** - invite business owners to consider how the proliferation of internet-based activities are creating new competitive threats as well as advantages. Entrepreneurs are independently minded and thrive on creating their own methods.

3. Fostering the digital economy in rural areas

- The University of Lincoln has undertaken research on the nature of digital sector in Lincolnshire¹⁰. As in other rural areas **the digital sector is small, but it is increasing recognised as an ‘enabling sector’ that underpins growth and innovation in other sectors.**
- **Poor broadband infrastructure is identified as a barrier to the growth of the digital sector in rural areas** such as Lincolnshire.
- Even where broadband connectivity is available, **firms in the digital sector experience recruitment difficulties due to poor perceptions of rural areas** among graduates and young professionals. Although not part of our study, a good example of a campaign to challenge perceptions of rural areas among young professionals is seen in the Cotswolds: www.rockthecotswolds.com/
- The *Greater Lincolnshire’s Digital Landscape* study also identified that **connections with the local HE sector are important for the digital sector in rural areas**, to ensure that local firms have access to IT graduates and that these graduates are retained in the rural economy. Examples of these connections include placements, internships, and degree level apprenticeships.

⁸ Price, Liz and Shutt, Jim and Sellick, Jessica (2016) *Supporting SMEs in the take up and use of broadband: what works?* Presented at Regional Studies Association Annual Conference, 3-6 April 2016, Graz, Austria

⁹ Fuller, Ted and Bosworth, Gary and Deville, Jane (2016) *Onlincolnshire Knowledge Base Collaboration*. Project Report. Lincolnshire County Council

¹⁰ Price, Liz and Annibal, Ivan (2017) *Greater Lincolnshire’s Digital Landscape summary report*. Technical Report. Business Lincolnshire Growth Hub

Sources of Evidence

- Bosworth, Gary and Newbery, Robert (2015) *Home-based businesses in rural England*. Regions Magazine, 299 (1). pp. 6-9. ISSN 1367-3882
- Bosworth, Price & Deville (2017) Engaging rural SMEs in the digital economy. Presented to the Regional Studies Annual Conference, Dublin, June 2017.
- Bosworth, Gary and Saleminck, Koen (2014) *Investigating community-led broadband initiatives as a model for neo-endogenous development*. In: 12th Rural Entrepreneurship Conference, 18-19th June 2014, Harper Adams University. (available online: <http://eprints.lincoln.ac.uk/14587/>)
- Fuller, Ted and Bosworth, Gary and Deville, Jane (2016) *Onlincolnshire Knowledge Base Collaboration*. Project Report. Lincolnshire County Council. (available online: <http://eprints.lincoln.ac.uk/22590/>)
- Fuller, Ted and Warren, Lorraine (2016) *Anticipating technological futures in rural enterprises*. In: 14th Rural Entrepreneurship Conference, 15-18 June 2016, University of Lincoln. (available online: <http://eprints.lincoln.ac.uk/28243/>)
- Price, Liz and Annibal, Ivan (2017) *Greater Lincolnshire's Digital Landscape summary report*. Technical Report. Business Lincolnshire Growth Hub. (available online: <http://eprints.lincoln.ac.uk/27616/>)
- Price, Liz and Shutt, Jim and Sellick, Jessica (2016) *Supporting SMEs in the take up and use of broadband: what works?* Presented at Regional Studies Association Annual Conference, 3-6 April 2016, Graz, Austria
- Price, Liz and Shutt, Jim (2015) *Evaluation of 'An Online Revolution'* Project Report, undertaken by University of Lincoln for Lincolnshire County Council (available on request)
- Price, Liz and Shutt, Jim and Atherton, Andrew and Noke, Hannah (2008) *An evaluation of the economic impact of broadband in Lincolnshire: updated final report*. Project Report. Enterprise Research and Development Unit, University of Lincoln. (available online: <http://eprints.lincoln.ac.uk/11751/>)
- Price, Liz and White, Don and Atherton, Andrew and Noke, Hannah (2007) *Understanding take-up of broadband by small and micro-enterprises: a case study*. In: 30th Institute for Small Business and Entrepreneurship Conference, 7-9 November 2007, Glasgow (available online: <http://eprints.lincoln.ac.uk/4756/>)
- Newbery, Robert and Bosworth, Gary (2010) *Home based business sectors in the rural economy*. Society and Business Review, 5 (2). pp. 183-197. ISSN 1746-5680.
- Saleminck, K., Strijker, D. & Bosworth, G. (2017) "The community reclaims control? Learning experiences from rural broadband initiatives in the Netherlands" *Sociologia Ruralis* (available online: <http://eprints.lincoln.ac.uk/27963/>)
- Saleminck, K., Strijker, D. & Bosworth, G. (2015) "Rural Development in the Digital Age: a systematic literature review on unequal ICT availability, adoption, and use in rural areas" *Journal of Rural Studies*. <http://dx.doi.org/10.1016/j.jrurstud.2015.09.001>
- "Connecting Rural Entrepreneurs", presented to the iTRACT stakeholder and partner meeting, Oldenburg, Germany, 21-24 May 2014