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## **Chapter 8**

# **On Overcoming the Barriers to Regional Engagement**

## **Reflections from the University of Lincoln**

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Universities have been portrayed as bringing an array of benefits to their local region, no more so than in regions which are relatively peripheral and disadvantaged (Goddard and Vallance, 2013; OECD, 2007; Coenen, 2007). From simple economic multiplier effects to more transformational impacts on local innovation, culture and public services, universities are seen as a universal good which can significantly enhance a local economy (Charles and Benneworth, 2001; Huggins and Johnston, 2009; Lawton Smith, 2007). Whilst traditionally seen as providers of education, a source of research and innovation in collaboration with regional businesses, universities also support the development of civic society (Arbo and Benneworth, 2007). In peripheral regions which often lack the advantages of urban agglomeration economies and the systemic effects of innovation ecosystems, a university may offer a means of radically changing the development trajectory, enhancing skills, stimulating local innovation and connecting the region with other centres of

knowledge production (Charles, 2006; Coenen, 2007). As a consequence, local interests have often lobbied for the establishment of new universities (Charles, 2016), and governments have sought to decentralise universities to promote regional development (Pinheiro et al 2016).

Whilst the UK has seen a growth in universities and campuses in rural and peripheral areas in recent decades, this process has tended to be evolutionary, with most examples either taking the form of the conversion of relatively small colleges of higher education to universities, or very small new campuses. Previous work has shown the limitations of some of these developments as small institutions which have had to specialise and hence limit the scope of their potential impact on their regions (Charles 2016). There have been very few cases since the 1960s of a new full-range university being developed in a peripheral region in the UK where none existed before.

One exception has been Lincoln, where the development of a new university since 1996 has taken an unusual course, and where the early development of the university was initiated by, and shaped by, local interests. Lincoln is a small historic city at the centre of a large rural county – one of the main centres of agricultural production in the UK. Local interests developed a new campus and invited a university to set up a satellite operation, but this then became the primary campus as the university moved away from its original site – there are very few cases of a university moving between cities, and especially to a smaller and more rural location. The genesis story of the university in Lincoln has played a significant role in the manner in which the university has sought to engage with the community. The subsequent expansion of the university and its creation of new schools, such as engineering, has involved considerable local partnership building, and is a distinctive experience within the UK. There is universal

recognition that the university has changed Lincoln, as a small city, for the better, and that the university is a positive asset to the city (Regeneris, 2017), and an exemplary case of a successful campus based in a small city in a rural region that has to cope with significant economic, social and environmental diversity. During its twenty years of existence, the University of Lincoln has grown from a branch campus to a full-range university, currently responding to regional economic needs by collaborating with local businesses and employers, such as Siemens, and serving the large food manufacturing sector in the region through the National Centre for Food Manufacturing (NCFM) at the Holbeach campus in the south of Lincolnshire.

There remain substantial challenges though. Although the University of Lincoln is now a medium-sized university with 14,000 students, and with a smaller second university in the city (Bishop Grosseteste University with 2000 students), Lincoln remains a small labour market for academics and is relatively peripheral. The university seeks to continue to grow and increase the value it can add to the community, requiring an ongoing transformation (UoL, 2016). The wider region, beyond the city of Lincoln still has considerable weaknesses as an agricultural area with relatively low-income levels and seasonal industries. The regional business environment is dominated by micro-enterprises, and the whole region struggles with a relatively weaker skills base than the rest of the UK (Lincolnshire Assembly, 2008; DCLG, 2017). Since the turn of the millennium, the region has sought to build on local strengths such as its traditional engineering and agricultural base to encourage regional entrepreneurship, working in collaboration with the university to both increase the number of SMEs and respond to their particular needs (Lincolnshire Assembly, 2008).

The absorptive capacity of both the city and region for university services and outputs is limited, and a challenge for the university is to help develop that capacity. The future of the region requires joint development to realise mutual benefits – how can local engagement help the university enhance its position in the national university hierarchy? What are the challenges in developing an engaged university in a rural region meeting the expectations of local stakeholders, whilst also moving up the university rankings and attracting international students? This chapter examines how universities in a rural area can overcome the challenges in engaging with its region. Through the case of the University of Lincoln, we will illustrate the ways in which the university collaborates with its local partners and businesses thus fostering innovation and engaging with the local community.

A brief overview of universities' engagement in rural regions is outlined in the next section, after which the method employed for collecting empirical data is reviewed. This is followed by a description of the local context and the story of the origins of the university. An overview of how the University of Lincoln fosters regional innovation, and the challenges involved in doing so, is presented highlighting three cases that demonstrate the university's regional engagement efforts. Subsequently, a discussion of findings that synthesises empirics and theory is presented, and ultimately the reflections and conclusions drawn from the case.

## **Universities engagement in rural regions**

The UK government has focused much effort on encouraging the economic engagement of universities (e.g. BIS, 2013). It is thus widely recognised that universities should contribute to regional development, through the so-called third mission – also referred to as outreach or community service – which goes beyond the traditional core functions of teaching and research (Jongbloed *et*

*al.*, 2008). Encouragement of the third mission is particularly concretised in policies and research funding instruments (Vorley and Nelles, 2009), in which higher education is expected to take actions to facilitate entrepreneurship, technology transfer and interactive learning, building the third mission around their interaction with regional industry and society (Arbo and Benneworth, 2007).

Over the past two decades the UK has been a leading player in the shift from a more traditional approach to higher education, leading to new models of collaboration for innovation, such as science parks, incubators, increased contract research, consultancy services, access to state-of-the-art-laboratories, and strategic alliances with non-academic partners for joint R&D activities (Jongbloed *et al.*, 2008). Under the Labour government of the 2000s, a number of new funding schemes for academic entrepreneurship and wider business and community engagement were introduced, including the Higher Education Innovation Fund as an annual addition to the university block grant focused on supporting external engagement activities (third stream funding). Regional development agencies provided considerable funding for regional innovation activities, and although subsequently abolished and replaced with Local Enterprise Partnerships, some of this activity has continued, especially with support from the ERDF. More recently the development of a national industrial strategy (UK Government, 2017) and preparations for Brexit have stimulated the creation of a number of new programmes to encourage universities to work with business, especially through new local industrial strategies currently under development ( BEIS, 2018).

Universities' engagement is mainly influenced by two factors, namely the type of university and the type of region, which together determine universities ability to work together with local

stakeholders and engage with regional systems (Boucher *et al.*, 2003). In the UK there are substantial differences in the scale and research intensity of universities, affecting the scale of intellectual and financial resources available for engagement with business and the community. Specialist institutions such as creative arts-based universities play a very different role in their region than science-based or generalist universities. Universities have also taken different stances on their mission and regarding regional engagement. The type of region also has a significant impact on universities' ability to foster economic development: if the other local key players' capacity to absorb knowledge is limited, it is more difficult for universities to become central drivers of regional development just by themselves (Breznitz and Feldman, 2012). Therefore, universities in a rural environment have to consider even more carefully how and to which local needs they are capable of responding, though their ability to determine the type of institution they are may be limited for several reasons. First, most universities are mainly urban institutions, and a more rural location limits some of the external partnerships and interactions on offer to them (Charles, 2016). Second, the role of universities in building a strong civic society by creating a space for debates and exchanging of ideas (UUK, 2014) may be even more important in rural areas; the most engaged universities are typically "*single, relatively large universities located in peripheral regions*" (Boucher *et al.*, 2003, 984–996). Third, the university is faced with the tension between meeting local needs, reinforcing existing traditional industries and potentially locking-in to past development paths (Hassink, 2010), or bringing new ideas and technologies to the region as part of smart specialisation strategies (Kempton *et al.* 2013).

Many universities in recent years have taken on a degree of responsibility for working with regional partners for the collective good of their local area, seen in various ways as engaged

universities (Bridger and Alter, 2006; Uyarra, 2010), civic universities (Goddard et al, 2016, CUC, 2019) or anchor institutions (Harkavy and Zuckerman, 1999; Taylor and Luter 2013). In these cases universities recognise some mutual interests with regional partners in promoting economic and social development, although as an active rather than a passive partner, playing a full role in the development of regional strategies, and not simply responding to regional demands.

Although universities' regional roles include the attraction of talented people, providing study opportunities and supporting both the local economy and the community, these goals can be more difficult to achieve in rural areas, in which the universities must deal with a more diverse economic base, very small-scale businesses and a lower presence of other knowledge institutions (Charles, 2016). In particular the SMEs may not be able to articulate their needs for knowledge, which hinders interaction and potential knowledge transfer between universities and businesses (Jongbloed *et al.* 2008). This also decreases innovation potential in rural areas, in that the potential for innovation is likely to increase with the size of the business (GLLEP, 2014). However, for university-industry collaboration, location is indeed important: when partners are located in the same area, the networking opportunities increase (Jongbloed *et al.*, 2008).

Common drivers for rural universities are typically fostering greater student participation in higher education, responding to local educational needs – as generic as they may be – as well as developing research fields linked to local industries. Responding to all these expectations at the same time is especially demanding for smaller rural campuses, and they often lack the scale to meet both the educational needs and create true collaboration with local industry at the same time (Charles, 2016). The type of research collaboration is also very much reliant on the disciplines in



question, and the universities should seek mutually beneficial exchange, so that the collaboration is a response to the expectations of both parties (Jongbloed *et al.*, 2008). This may again, be more challenging to achieve with the more limited disciplinary base of smaller rural campuses.

In the case of Lincoln this context raises some interesting challenges. A new university was brought into a rural region with considerable local expectations. As the university grows how does it meet local demands as an anchor institution yet also develop capacities to compete within a national higher education system?

## **Research methods**

The case study of Lincoln was developed as qualitative study with empirical data obtained through interviews with both university and external stakeholders. A qualitative approach was preferred in gaining more insight into the topic for a case study of this explorative nature (Yin, 2002; Hammarberg *et al.*, 2016). Interviews, which were typically semi-structured, were valuable for obtaining deeper understanding into the chosen case (Yin, 2002; Hammerberg *et al.*, 2016; Wilson, 2014), as this type of interview structure allows the investigator to probe more deeply. Interviews with staff members of the University included those working in the Research and Enterprise services, the Engineering School and at the National Centre for Food Manufacturing. These choices were guided by the involvement of these departments in on-going university engagement and impact efforts. A County Council officer in charge of innovation support processes was also interviewed, the choice based on the active collaboration between the university and the County in regional innovation support services. Industry contacts presently ‘engaged’ with the university were also approached. Attention was paid to ‘engaged’ firms in particular as these were deemed better placed to comment on the challenges faced while engaging with the University of Lincoln.

In addition, three former graduates from the university were interviewed, especially to probe the ‘issue’ of graduate retention. Altogether, 11 interviews were undertaken from the University, County Council and industry. Given the research question, interviewees were essentially asked questions relating to their experiences of links between the university and local industry, the challenges involved and how these challenges were being managed. As a means to triangulate, data from policy documents, company websites and reports were also utilised. This was advantageous for the development of ‘converging lines of enquiry’ as suggested by Yin (2016, 87). The interviews were complemented with the experience of one of the authors in sitting on university committees for enterprise and employer engagement.

The framework method (Gale *et al.*, 2003; Ritchie *et al.*, 2003, 256) was useful for analysing the qualitative data collected, allowing for a similar logic to flow through the entire scope of the study. Collected data was transcribed and coded. Emerging themes were analysed between and across data sets (e.g. organisational types) to make meaningful interpretation. Empirical data was also compared with secondary sources such as documents and ultimately to the relevant literature. Validity and reliability of research was enhanced by having investigators swap sections of focus, in order to critique the work in its entirety and ensure that a similar logic flows through.

## **The need for a university in Lincolnshire**

The UK has seen a gradual process of filling in the gaps in the map of higher education provision over a period of many decades. From an initial group of universities in the major cities (plus Oxford and Cambridge), successive rounds of development have diversified the locations of campuses, both in the form of main campuses and satellites. In the 1960s a new set of ‘county’

universities were set up in smaller cities – York, Canterbury, Guildford etc. The polytechnics, to become universities post 1992, were mainly based in the larger cities and industrial towns, but some of these also had campuses in more rural settings – Staffordshire for example. A later round of new institutions from the late 1990s onwards have included some more specifically focused on rural areas –Cumbria, Highlands and Islands – and smaller cities – Chester, Winchester.

Lincolnshire as a county had missed out on the earlier rounds of university development prior to 1992, with Lincoln overlooked during the development of county focused universities in the 1960s even though it shared some similar characteristics with cities such as York and Canterbury which were selected at that time. Lincolnshire perhaps suffered more from its relative peripherality though, both in terms of its access to transport networks, but also through its perceived parochial nature.

Lincolnshire is known mainly as an agricultural county, with a primary focus on arable farming and related food processing. Much of the county is relatively flat with rich soils and moderate rainfall, and is devoted to large scale arable farming of cereals and vegetables. With the exception of Lincoln and an area to the north, the settlement form is largely of small villages and market towns, with an economic base of very small firms. The Northern strip of the county along the Humber Estuary is somewhat different with Scunthorpe as an industrial town built around its steelworks and Grimsby as a port and fisheries centre. These areas of North and North East Lincolnshire have the character of old industrial areas with concomitantly high levels of unemployment. Another distinct area is the coastline with a strip of low-budget holiday resorts, focused on Skegness, areas with relatively low paid seasonal jobs around a limited set of tourism-related sectors.

As a result, Lincolnshire has experienced continual low levels of GDP. In 2005 the per capita GDP figure was €29,100 compared with €39,030 for the UK. Only 7 NUTS II regions in the UK were lower: areas such as Tees Valley, Cornwall and Northern Ireland, and several of these had experienced Objective 1/ Convergence status in the Structural Funds at some point, recognising them as some of the weakest economies in the EU. Calculated on a purchasing power per capita basis Lincolnshire is at an equivalent level to the Algarve, or sits between the Italian Mezzogiorno and the poorest North Italian region (Eurostat, 2017).

Despite the agricultural nature of the county, the city of Lincoln has a long tradition of engineering, although this saw considerable decline from the 1980s, after dominating local employment for around 100 years. The wider East Midlands economy has also been highly dependent on manufacturing, which shows in its high share in GDP: for example, in 2001 the share was 29.4 %, compared with an average of 21.3% in the UK. However, the relatively low level of R&D investments in manufacturing within the region, suggested that this sector was unlikely to grow rapidly in the future (UUK, 2001), and by 2015, the share of manufacturing had indeed fallen to 16.9%, which is still the highest percentage level of any region in the UK. In Central Lincolnshire, the key sectors for economic growth remain agri-food, manufacturing and tourism. The city of Lincoln has also been aiming for growth in retail and knowledge-intensive business services with support from the University, for example in the Science and Innovation Park. (Greater Lincolnshire LEP, 2016.)

The business environment in the wider East Midlands is dominated by micro-enterprises. In 2015, the region had 133,055 businesses employing only 0-9 workers corresponding to 87.7% of the area's employers. Small businesses (10-49 employees)

share was significantly lower, 15,445 (10.2%) but still ahead of the national average (9.6%). Though there are only 605 large businesses (250+ employees) in the region, their share of 0.4% corresponds to the UK as a whole. This also limits the innovation potential in rural areas, as the potential for innovation is likely to increase with the size of the business (GLLEP, 2014).

The whole East Midlands struggles with a relatively weaker skills base than the rest of the UK. At the beginning of the 21st century, the region was 3-5% behind of the rest of the country (UUK, 2001), and there has not been any significant improvement since: only 31.8% of the East Midlands population has a degree qualification, compared with 36.8% in England as a whole. The lack of a highly skilled workforce has even led to difficulties in finding suitable candidates for open vacancies (DCLG 2017). According to a 2014/2015 graduate destination survey of University of Lincoln, 42.7% of graduates stayed in the East Midlands and 13.4% in the adjacent East region of England. The East Midlands breakdown shows that Lincoln is the most popular destination (40.5%), followed by the neighbouring district of North Kesteven (10.0%) and then Nottingham (8.0%). The survey's results also demonstrate that University of Lincoln's graduates have good prospects after completing their studies: 95% of the graduates had either employment or pursued their studies after 6 months of finishing their degrees (UoL 2016a), even though the region is struggling to retain the graduates.

Since 2004 Lincolnshire has experienced a wave of immigration from central and Eastern Europe which was unexpected but built upon a previous round of Portuguese migrants in the 1990s (Barnes and Cox, 2007). These flows illustrate the weakness of the Lincolnshire economy, with migrants taking up seasonal positions in the food and agriculture sector, occupying jobs which are poorly paid by UK standards and are not seen as desirable by

UK workers. The continued flow of such migrants into an area unused to migration stimulated considerable tensions, leading to a high Brexit vote in 2016.

Despite the recent growth of the city of Lincoln, many regional problems remain from health issues to problems in the living environment, the rising number of student and migrant workers causing pressure on the infrastructure to keep up with the fast growth (Greater Lincolnshire LEP, 2016). Lincoln's role as the major centre of employment in Lincolnshire needs to be supported with policies aiming to foster a wider range of employment opportunities, and to support both existing and new companies in order to attract new investments to the area. The policies should also reinforce Lincoln as provider of innovative employment possibilities (Greater Lincolnshire LEP, 2016). Thus, the universities' role as key drivers of economic growth and providers of further development (OECD, 2011) is acknowledged also in Lincolnshire, and the County Council express their support for further university growth to maximise their economic impact to Central Lincolnshire (Greater Lincolnshire LEP, 2016).

## **Lincoln as an embedded anchor institution**

The University of Lincoln is an unusual case as its origins do not lie in the rural environment of Lincolnshire, but in the urban location of Hull. The university started as several colleges based in Hull which came together to form the Hull College of Higher Education in 1976. It briefly became Humberside Polytechnic before achieving university status as the University of Humberside in 1992. The move to Lincoln was thus a very unusual development in the UK context and emerged from local demands in Lincoln during the 1990s.

Lincoln had long aspired to having its own university. In the early 1990s the local branch of the Confederation of British Industry

(CBI) produced a forward-looking document ‘Towards the Year 2000’<sup>42</sup>. This presented the views of local industry on the regeneration of Lincolnshire and specifically identified the need for the county to have its own university. Previous attempts had apparently been made, unsuccessfully, since the Robbins expansion of the 1960s<sup>43</sup>, but were allegedly frustrated by the ‘commercial jealousy’ of other universities in the East Midlands (GOA Ltd, 2001, 12).

The university idea was then backed up by Lincolnshire County Council and Lincolnshire Training and Enterprise Council (TEC) which sought the possibility of a university college in Lincoln as a satellite to an existing university from one of the surrounding cities. The TECs had been established from 1990 by central government to develop local partnerships for training, skill development and wider regeneration. Each local area had a TEC with a local board responsible for developing a plan focused on the needs of the locality. In the case of Lincolnshire, the TEC identified the idea of a University for Lincolnshire in its initial business plan, and was in a position to support the idea with direct funding. The County and TEC did not have a statutory duty to develop a university, but argued that they had a statutory power to support the process on the grounds of economic regeneration, and were able to persuade government to allow them to make a grant toward the establishment of a university presence in Lincoln. A project company was thus established to hold a grant of £10 million and to negotiate with a university on the establishment of a campus. Local businesses, including the

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<sup>42</sup> This account of the development of the University of Lincoln has been informed by an unpublished paper from David Rossington, the former chief executive of Lincolnshire TEC.

<sup>43</sup> The Robbins Committee report of 1963 identified a need for new universities to meet growing demand for graduates and set out locational criteria leading to the designation of a number of new greenfield universities such as York, Essex, Surrey and Kent in smaller cities in rural counties.

Lincolnshire Co-op, Jackson Building Centres, GEC-Alsthom (later Siemens) and Cargill seed merchants, became involved in the process and raised additional funds towards the project. It was decided that the County should approach universities to see if they would be willing to establish a University College in Lincoln and in April 1991 the Director of Education approached six institutions in the Yorkshire and East Midlands areas. Following discussions with each in late 1991, four were asked to make formal presentations on the support they could offer. An initial agreement was made with Nottingham Trent University, and a site identified in central Lincoln on derelict railway lands beside the Brayford Pool, an old canal harbour near the city centre (Rossington, 2016).

As construction of the first building began in 1995, Nottingham Trent was forced to withdraw as they were unable to secure quota for additional funded student numbers and were presumably unwilling to transfer quota from their Nottingham site. The new University of Humberside was however very willing to step in, as it is reported they were unhappy with the local context in Hull and felt under pressure to merge with the University of Hull. They would operate a full university presence on the site, would change their name to the University of Lincolnshire and Humberside (ULH) and would transfer existing student allocations to Lincoln through relocating departments. They even suggested that the vice-chancellor's office be moved to Lincoln. The campus opened in 1996.

Over time the university consolidated its position in Lincoln, including acquiring two former colleges of art and agriculture in Lincoln. These two specialist colleges had been in Lincoln for many years and had been absorbed by De Montford University of Leicester as part of their expansion as a regional university in the East Midlands. De Montford had then decided to retrench to



Leicester and were willing to pass the two colleges on to ULH. At the same time ULH gradually transferred departments from Hull to Lincoln and eventually renamed itself the University of Lincoln and sold off its campus in Hull.

The origin of the university in Lincoln was thus the culmination of active lobbying and funding from the County Council and local business interests and the university has always responded to this in terms of its mission as an anchor institution (Birch *et al.*, 2013), supporting the local economy. In a sense this is ironic as the university is only in Lincoln because it was footloose in the first instance, but having invested heavily in the new campus in Lincoln it is clear that the university has sought to embed itself in the locality and take on that anchoring role.

The University has also had a major impact on the physical form of the city. In the early 1990s the Brayford Pool area, close to the centre of the city, was a large area of derelict land, with old industrial property and railway yards. The Pool itself was an ancient port originally developed by the Romans and subsequently linked by canal to the wider English waterway system. The Brayford site was the preferred site for the University, the other considered being a former mental hospital in a village on the outskirts of the city, so the decision to build the University in the centre of the city has been an important factor for its physical regeneration. Initially one building was erected on the south side of Brayford Pool, and land was transferred to the University surrounding this. From this point the campus has developed to the south and now occupies a large area removing almost all signs of the former industrial blight, now gradually spreading west with the building of a science park on yet more derelict land. The emergence of the University as a major employer and source of students has led to the north side of the Brayford Pool also being developed with hotels, bars and

restaurants, creating a major leisure destination of regional significance.

Given the anchor institution philosophy adopted by the university (UoL, 2016) it has sought to develop broad and deep relationships with the city and region. On the one hand this can be seen in the links with business and entrepreneurship which will be explored in the next section, but this is only one dimension of its engagement. There are also collaborations around the cultural and creative industries in Lincoln, around nursing and future medical training, in social care, sport and not least through educational opportunities for disadvantaged students. However, universities' engagement is typically a peripheral activity, and unless it is successfully linked to a broader institutional change, the activities will remain "peripheral to the core" (Benneworth & Sanderson, 2009). Partnerships are one of the key elements in linking regional engagement to universities core functions. Partnerships in Lincoln operate at three main levels. There are some strategic relationships involving the university, public sector and business, notably through Greater Lincolnshire LEP and the implementation of the EU Structural Funds. These strategic relationships, notably with the public-sector, steer the university's other regional partnerships through varied policies and funding instruments. A second layer of partnerships link the university with individual large organisations such as the County Council, or Siemens and are focused around specific objectives and relatively long-term projects. A third level of partnerships concern shorter term links with a wider range of businesses and organisations including SMEs and the voluntary sector and across a wide range of topics.

Examples of these partnerships are examined in the next section. Two collaborations which have been highlighted nationally as good practices in recent higher education policy documents are

the link with Siemens and the Sparkhouse incubator (BIS, 2013). The Siemens collaboration demonstrates how a long-term, strategic university-industry partnership can have multiple benefits to both parties. The Sparkhouse case portrays how the incubator, initially launched by the County Council, has become part of the university's business support services, and how it can concretely support local start-ups and graduate entrepreneurship. Finally, the University has also been developing a new science park project with the Lincolnshire Co-op to build on the experience of Sparkhouse, and also the Think tank incubator.

### **The case of the Siemens collaboration**

Siemens are the largest local manufacturer in Lincoln, with 160 years of history as an engineering business in the city under a variety of different ownerships and names. The company had experienced difficulties in recruiting and retaining engineers, to the point where they were considering company relocation. Discussions with the university led to a proposal for a collaboration agreement and the formation of a new engineering school. As a result of the collaboration Siemens made a long-term commitment to produce turbines for industry and power generation in Lincoln, and expand its R&D and product innovation processes. The systematic collaboration required more highly skilled workforce and enhanced the region's R&D capacity (University of Lincoln, 2010). One of the major outcomes is the establishment of a new school of engineering in 2009 (Charles, 2016), the UK's first purpose-built engineering school in 25 years. The school received significant financial investment of £7.3 million from Siemens Industrial Turbomachinery limited (SITL), EMDA, Lincolnshire County Council and £4.3 million from HEFCE (University of Lincoln, 2010). What is innovative about the school is not just the joint research agenda between the school and the company, but that Siemens placed their Training and

Competence Institute in the new university engineering building, a unique development for the company. This is used by Siemens employees and customers to learn how to operate and maintain Siemens machinery safely.

The Siemens-University of Lincoln partnership has stimulated a number of collaborative research projects on themes of interest to the company. According to the Wilson Review (BIS 2012), the partnership resulted in the generation of six times the turnover cited in the original business plan, provided major business benefits for the company as well as research outcomes for the university all while protecting IP and observing commercial sensitivities.

A key benefit for Siemens was a much higher retention rate for their graduate engineers, increasing from around 40-50% to 90%. Also, due to Siemens involvement in the curriculum at Lincoln, they have been able to reduce the additional training needs for new graduates from 18 months to just 9 months (Deloitte, 2017). Overall, the student employment rate of the School of Engineering in the Graduate Destination Survey 2014/2015 is significantly better compared to the whole university. The graduate level employment for the School for Engineering is 90.91% compared with 71.89% at the overall university level. Siemens is also the most frequently mentioned employer of graduates (UoL, 2016a). The partnership has also spread beyond the engineering school, and now the Business School also places a number of students in non-engineering functions in the local Siemens business in areas such as marketing and procurement.

## **The Sparkhouse case**

Lincoln, like many other HEIs, has recognised how important and beneficial it is to strategically support student entrepreneurship (Gibb and Hannon, 2006). So, student and graduate

entrepreneurship has been identified as a strategic goal in the new university strategy (UoL, 2016) and the university has established structures to provide incubation support for start-ups. The University of Lincoln's Sparkhouse, first launched in 2002, is an award-winning business incubator, based on the Lincoln campus, originally designed to foster student entrepreneurship in the creative sector and to help retain graduates, that has supported over 230 new and growing businesses in the region and has created over 370 new jobs (Sparkhouse, 2017). At first, the incubator was run by the Lincolnshire County Council, and it mostly provided entrepreneurial services to students and graduates, especially in the field of arts and creative industries. This was at a time when there was a gap in fostering entrepreneurial skills in the East Midlands' universities. Helping students to start up their own businesses was a way to try to retain more graduates in the area (staff member, UoL).

Since establishing Sparkhouse, the University's role has grown in supporting local SMEs. Besides the targeted outreach activities, there are beneficial experiences from providing a single point of entry for local businesses (BIS, 2013), and Sparkhouse currently offers a variety of services to both students and businesses (University of Lincoln, 2010). The business support services include business planning advice, mentoring, finance services, training and access to specialist support and also networking opportunities among tenants (Sparkhouse, 2017). Sparkhouse still offers support to students from entrepreneur skills training to small grants to start their own businesses with ERDF funding.

All services combined, the incubator's role is to shape the local economy, but also makes Lincoln more attractive as a city (staff member, UoL). Though facilitating networking is not a part of Sparkhouse's core functions, the sharing of facilities with other start-ups creates a sense of community.

## Fostering regional innovation in Lincoln

The benefits of the University of Lincoln's role in the local economic regeneration of Lincolnshire are most visible in the city of Lincoln.<sup>44</sup> A major channel for the UoL in fostering innovation in local businesses is the Lincoln Science and Innovation Park, established in collaboration with the Lincolnshire Co-operative Society as a hub for investment in science and technology. The Co-operative Society owns the main tranche of land on which the park is based but has been a long-term supporter of the university since its foundation, also involved in the development of a pharmacy degree. Currently consisting of the Think Tank Innovation Centre, the Joseph Banks Laboratories and the newly opened Boole Technology Centre, the Science Park is the sole science, innovation and R&D dedicated site for private and public sectors in Lincolnshire. The interviewees thought that the Science Park will eventually attract larger companies, strengthening links with the university:

*'[...] We are getting new businesses to relocate here just because of the university. I think the Science park, Boole Technology Centre and Think Tank, is really gaining momentum.'* (employee, County Council)

*'[...] Facilities attracting big companies might even influence the curricula, which links between research and business.'* (staff, UoL).

The Science Park has required the County Council and the University of Lincoln to work together closely, something which builds upon a rather successful history of collaboration dating

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<sup>44</sup> In 2000–2009 the number of business grew 23% in Greater Lincoln, which is a significantly higher percentage compared to the rest of the county (17%) and East Midlands (17%).

back to the origins of the University. Adjacent to the science park site but part of the wider vision of the park, UoL is also managing an existing incubator called the Think Tank on behalf of Lincoln City Council under a management contract, combining commercial tenants and university activities.

In addition to the science park, the UoL has also been developing training and support for SMEs through externally funded programmes, notably through the ERDF supported Innovation Programme for Lincolnshire. The university was invited to bid for the management role as well as the delivery of innovation support as a key strand of the 2014-20 European Structural Investment Funds programme for Lincolnshire, and coordinates the whole innovation expenditure on behalf of Greater Lincolnshire LEP.

## **The ‘challenge’ of engagement**

The challenges faced by the University of Lincoln, in its quest to engage with its local community can be said to be both internally and externally generated.

A ‘cultural gap’ exists between the university and its industry collaborators especially bordering on issues of inadequate marketing observed through a lack of information on ‘engagement’ opportunities on the university's website, and a ‘relatively’ slow response time. Industry partners who are used to a quicker response time than experienced from their university partners find this to be a challenge with engagement. This challenge as exemplified below, calls for better understanding between collaborating partners and a sense of urgency from the side of the university when industry is concerned.

*‘[...]You get a referral come in, or a question that could have led in a lot more, but we did not respond quick enough, it went to the wrong people, somebody didn't understand it...I think the understanding that has to take*

*place between industry and academia takes a lot of time and experience to navigate your way through it. If you look at a relationship like Siemens and the school of engineering that's a very good example where it's worked well because there is that level of understanding between academia and commercial aspirations' (staff, UoL).*

Besides engaging with local businesses, this gap hinders collaboration with local authorities, and promoting the university's regional role:

*'[...] so how can we help to promote these offices, it's really about knowing who is the right person to go to, what's the structure of each school,[...] it's just that for us it's important to know who's the 'go to' person in which school, which are the offices wanting to work the businesses, just to be clear so we can provide routes.'* (employee, County Council).

Some internal barriers exist between academic staff focused primarily on teaching and research and staff employed to engage with business. The need to support university aims around teaching excellence and improved research performance in some cases leave limited time available for wider business engagement.

Issues of intellectual property pose a challenge where the *'University academic is interested in publishing a finding, whereas his Industry partners are more interested in patenting it'* (staff, UoL). The issue here lies in finding a good balance between the industry's 'money-making' ambitions and the University's 'knowledge dissemination ambition', which may be challenging to always achieve in practice. This is also symptomatic of tensions between local engagement and the research excellence objectives in which publication is a central theme.



For University staff actively engaged in community outreach within the food sector of the county, having enough staff who could engage in training efforts to the locals remains an issue suggestive of the need to invest in more ‘outreach staff’ and to further develop internal mechanisms to link researchers and businesses:

*‘..... I am expected to know the entire breadth of qualifications and curriculum because you have to do that, because you can’t go to a company and say, well I’ll get somebody to get back to you...’* (staff, UoL).

Government interventions and policies, such as the ‘apprenticeship levy’<sup>45</sup> which require effective communication and informing of the local businesses on the changes, and ‘Brexit’ for instance were found to be significant challenges with regional engagement efforts by the university. This is seen for example in the sense that

*‘when Brexit was announced, some of our clients lost 20% of their workforce over-night and you know the shock waves that happened [...] those sorts of things impact on us hugely because we have to be proactive in trying to find solutions with them [...] our challenges are externally-driven, political challenges’* (staff, UoL).

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<sup>45</sup> The UK government is committed to boosting productivity by investing in human capital, for example, through the Apprenticeship Levy, introduced in 2017. It is a levy on UK employers to fund new apprenticeships: it will be charged at a rate of 0.5% of an employer’s salary costs and each employer will receive an allowance of £15,000 per apprentice to offset against their levy payment. <https://www.gov.uk/government/publications/apprenticeship-levy/apprenticeship-levy> 14th of August 2017.

‘Brexit’ has also raised worry concerning the funding for business support and R&D in the future:

*‘Brexit, when the vote was out, many of our businesses thought that the European tap is closed at once, and they have been really pleased that we have still been able to run our programmes until the end of their life cycles. For us, there is a real worry that there’s going to be a huge gap [...]’* (employee, County Council).

A local infrastructural deficit, relating to the road network to access very rural parts of the county is a challenge for broadening engagement efforts. This, as expressed by an enterprise partner of the University working in the food sector made it challenging to *‘share advancements in the food sector in the county’* (industry partner, NCFM).

The rural, geographically diverse environment of the county also makes it more difficult to reach businesses outside of Lincoln, and many of the businesses are not aware of their possibilities. *‘-- getting to those business that are hidden away, which are very busy with production and actually haven’t got chance to lift up their head and see what support is out there: how do we reach those and make them aware of what’s available and that’s our biggest challenge’* (employee, County Council).

Though Greater Lincolnshire’s economy is relatively stable, its large group of land-based businesses does not embrace innovation as it is more challenging to release resources for investment. The area has many family businesses, which typically are looking for lower risk and long-term investments *‘[...] there is a lot of family businesses in Greater Lincolnshire [...] that lends itself to the degree of stability, because those family-based businesses look for long term investments, they have an eye in the future giving the business to their children, so they tend to be a little more risk-*

*aversive and there's this link between risk and innovation, it is an interesting one.'* (staff, UoL).

A low educational status of people in the county was found to be affecting aspirations of people in the county. This issue was found to be generational and requiring careful management.

*'[...] we have low skills aspirations for those who do stay in the county [...] we have a university academy and if you look at the 11 year olds that are coming into our academy [...] we hear stories where they have never picked up a book before because their families don't have any books at home, very low aspirations [...] you have 3 generations now of families who were land workers, factory workers,...and you now want first generation people who might be dreaming of going to university one-day'* (staff, UoL).

Interviewees described that there is a large innovation potential in Lincolnshire, but also lack of ambition hinders economic growth *'[...] the challenge of the Greater Lincolnshire is the ambition [...] and I think we have the key role in driving ambition in Greater Lincolnshire as a whole and there are many (businesses) that are very innovative but don't recognise their potential.'* (staff, UoL).

Generally, a problem with graduate retention in the county was re-echoed in interviews. This was found to be the case for various reasons including lack of jobs and the graduate's dream to live in the big city. For example, *'[...] well there are no jobs, some who could actually get jobs just have the big cities like London on their minds'* (graduate, UoL). It was also noted, that the University of Lincoln has already taken actions to support graduates to stay in Lincolnshire, such as work placements at Siemens that might lead to employment after graduation, and discount schemes for post-

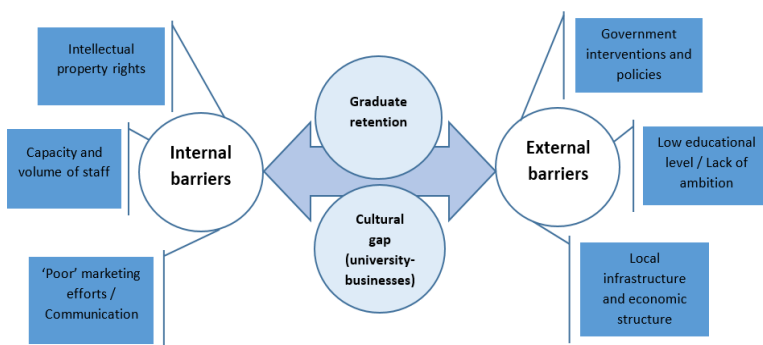
graduate studies. Also, a more employer-led curricula design was seen as one of the solutions:

*‘Tailored curricula is an example on how universities can respond to the changing needs of the markets, by combining [...] teaching material and practices from the right businesses to basic degree programmes’* (graduate, UoL).

But despite these initiatives and possible job opportunities, the personal situation of a student – especially family relations – often steers their choices to stay in the local region.

All these constraints were observed to be interrelated and somewhat overlapping, especially the graduate retention and cultural gap between university and businesses, which were identified to be both internal and external barriers hindering the university’s regional engagement and contribution to economic development (see figure 8.1)

**Figure 8.1: Internal and external constraints hindering engagement in Lincolnshire**



## **Overcoming challenges to regional development**

Universities are constantly pushed to reassess their role and relationship with their main stakeholders and communities. Understanding and managing the diverse partnerships as well as avoiding undesirable consequences of adopting new collaboration models requires considerable strategic planning (Jongbloed *et al.*, 2008).

A key role of universities in facilitating economic growth is defined by their cutting-edge research capability in their respective fields, innovation expertise and wide collaboration with businesses (BIS, 2013). They are in a unique position due to their capability to bring together external knowledge and research links with local students, actors and ventures, enabling global knowledge exchange in local processes, and thus increasing the innovation capacity of rural areas compared with relying solely on internal knowledge processes (Charles, 2016). This lends very well to the case of the University of Lincoln, which actively engages with its local community, through various partnerships based on competence and leading research.

The University of Lincoln's rapid growth and expansion of a range of degree programmes demonstrates that a full-range, multi-disciplinary university is more likely to be able to cater for different local needs from education services to research collaboration, and the organisation is capable of adapting rather quickly to the emerging local needs. This is not, however, a typical set-up for a rural campus, despite the university's brief history of being a smaller branch campus. It seems that the fast growth of the organisation has allowed the University of Lincoln to surpass the common dilemma of smaller campuses to either specialise in a region's vocational needs or focus on fewer disciplines linking teaching and research activities to the region

(Charles, 2016). Indeed, the university is actively doing both of these.

The regional innovation support services have become somewhat dependent on the university, especially in incubation support (Sparkhouse, Think tank), but also providing training for SMEs (e.g. Innovation Programme for Greater Lincolnshire<sup>46</sup>) or engaging with regional innovation policy (GLLEP's Innovation Council). The University of Lincoln's major role in the regional innovation processes, especially for start-ups, makes it easy to forget, that universities are not the only providers of high-level research and innovation support services for the business sector (BIS, 2012), though as is typical for rural regions, there are fewer knowledge institutions in Lincolnshire. Thus, the University has managed to secure this position in addition to the County Council as a key driver for regional innovation in just twenty years.

Universities tend to be considered as fairly "fixed" institutes in the regional development literature, with a weak capability to adapt to the changes of the external world. Despite being a hub of highly skilled people, their organisational capacity for strategic planning is seen as rather limited. At the same time the growing diversity of partnerships makes universities more integrated with society, also demanding more from management so that the HEIs do not become overburdened by the claims of the stakeholders (Jongbloed *et al.*, 2008, 308). This poses even further challenges to rural campuses, which are typically expected to respond to the needs of the local economy. These demands may be more diverse and complex than presumed, varying from more traditional sectors such as agriculture, tourism and services to high-technology manufacturing (Charles, 2016).

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<sup>46</sup> <http://lincsinnovation.co.uk/>

The University of Lincoln's strategy aims to conduct research that contributes to local challenges which can also have global significance. The university's 'living lab' approach strives to find solutions for regional problems that can be transferred multi-nationally, especially in personalised health, agri-food technology, creativity, digital arts and archives and rural communities. (UoL, 2016b). It is, however, a big challenge to balance research excellence and relevance and to find a profitable combination of the local and the global (Benneworth and Arbo 2007, 30, Rip 2000). This is especially the case when the challenges in doing so are not all within the university's reach to solve (e.g. externally-generated challenges created through new government policies and initiatives) and the specific elements of operational environment, such as local infrastructure or economic structure, which hinders university's regional engagement.

Government policies and interventions play a major role in developing business-university collaboration, but in the end it comes down to the collaboration and actions between individual universities and businesses to determine whether the partnership is successful (BIS, 2012). In the case of the University of Lincoln-Siemens collaboration the success is a result of committing to a long-term strategic collaboration, which is equally beneficial for both parties and building the partnership solidly on university core functions, education and research – though a wider impact on the local industry and innovation is typically harder to achieve and also identify. It is also worth noting, that a deep employer collaboration may, especially in curriculum design, steer research orientation. The anticipation of the future development of national policies in the post-Brexit era may change the present approaches to innovation support services and university-collaboration patterns, for which more hands-on strategising is expected; especially in the area of communicating with, and educating the

local businesses on what to expect, and how to apply themselves to expected changes.

Despite the University of Lincoln's rapid transformation from a branch campus to a full-range university, the surroundings remain rather rural, and as typical for such regions, they rely heavily on small and micro businesses and lack knowledge based businesses (Charles, 2016). The ongoing expansion of the university is without a doubt a challenge also for its management. The University of Lincoln's strategy 2016–2021 addresses the issue with the concept of a “tough leader”, which refers to the spirit of innovation and experimenting new practices in teaching, research, partnerships (UoL, 2016b). It goes without saying however that with the ongoing expansion, the university would need to attend to the requirement for more staff especially in support of ongoing engagement efforts that require outreach into the rural community.

In the light of the actions the university presently employs to foster engagement and the identified challenges involved in doing so, it remains a question of, what it would take for the university to overcome these challenges, and from a cost-benefit perspective, which strategies would be worthwhile. The coming years will reveal how the university will continue to combine innovation support with the university's core functions in other emerging sectors beyond engineering and food manufacturing, such as business services and visitor economy (Greater Lincolnshire LEP, 2016), but also if the region will manage to retain more graduates who are essential for knowledge transfer from the university into the local businesses. It will also remain to be seen if the university is able to maintain their rather dominant role and cater for changing regional innovation support needs or if other major innovation support providers emerge in the area in the future.



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