

Coventry & Warwickshire
Economic Assessment
TOPIC PAPER 3

Understanding & Mapping Innovation in Coventry & Warwickshire

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The critical importance of innovation to economic growth has long been recognised – from Schumpeter’s concept of “creative destruction” of the 1940’s¹ to the recent UK Government’s innovation strategy². Innovation drives improvements to productivity, increases competitive advantage, and continually creates new market opportunities. Innovation is also recognised as being place-specific, and can vary significantly within and between different economies³. Gaining an understanding of the level of innovation within the Coventry & Warwickshire economy is therefore fundamental to this wider economic assessment.

Innovation can be simply defined as the successful exploitation of new ideas. However, innovation can occur in a number of different ways and is not simply confined to the more obvious “product innovation” (the introduction of a new or substantially improved good or service). The OECD definition of innovation also includes “process innovation” (new or significantly improved production or delivery mechanisms); “marketing innovation” (new marketing methods involving significant changes in product design or packaging, product placement, product promotion or pricing); and “organisational innovation” (new organisational methods in business practices, workplace organisation or external relations). Innovation is more than invention – innovation implies the commercialisation and uptake of new ideas created (in part) through invention. As such, innovation does not and cannot operate in isolation from the rest of the economy and, as a result, there is increasing interest in understanding “local innovation systems”.

The key elements within an innovation system is the capacity of an area or economy to **access** knowledge and new ideas; **assimilate** this knowledge, **diffuse** this knowledge across the economy; and for agents within the economy to successfully **exploit** this knowledge. Traditionally, innovation policy has often focussed on the narrower elements of creating and exploiting ideas/knowledge within a particular area. However, the proportion of new information that can be developed within a locality is miniscule when compared to the total amount of information that is being developed in an increasingly more open and connected world (for instance, it is estimated that 96.5% of OECD new research knowledge is created outside the UK⁴). Furthermore, it has been shown that the general diffusion of innovation across a local economy (i.e. through supply chains or networks) is much more effective than a small number of highly innovative, unconnected businesses⁵. As such, accessing, assimilating and spreading external knowledge and information is a fundamental (but historically overlooked) aspect of local innovation. The concept of the wider innovation system is shown in Figure 1.

Measuring the level and nature of innovation within an economy is very difficult. There is no single indicator that can be used given the wide nature of innovation, and where data does exist it is often only for large geographic areas (i.e. the European Community Innovation Survey, which is only available at regional level). However, by considering each of the key elements of the innovation system above we can begin to make an assessment of the innovation capacity within the Coventry & Warwickshire economy (although further research into this area is clearly necessary in the future).

¹ “*Capitalism, Socialism and Democracy*”; Schumpeter, J. (1942)

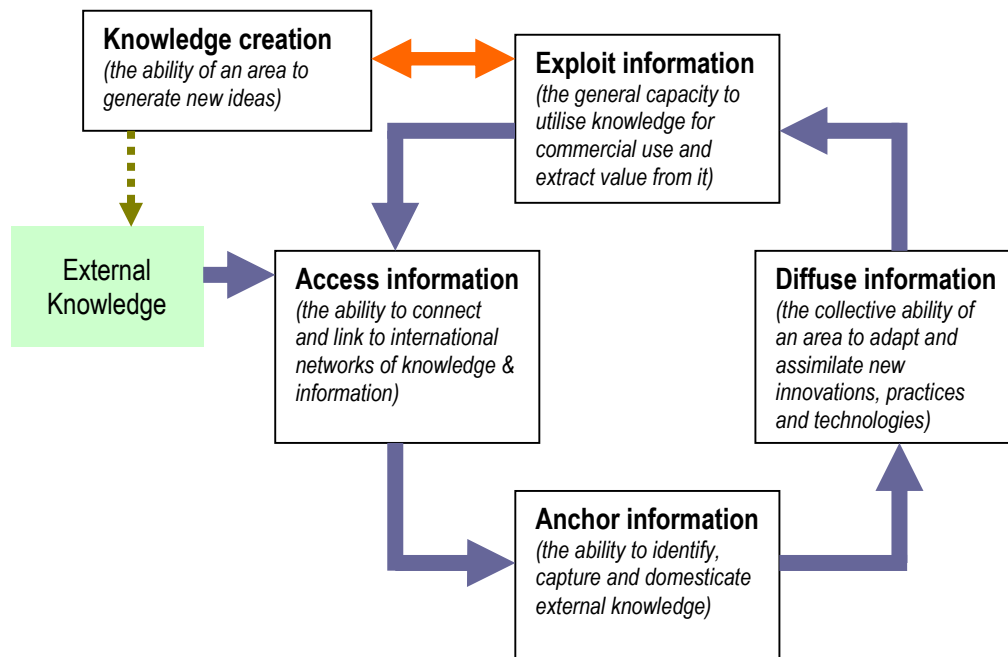
² “*Innovation Nation*”, Department for Business, Innovation & Skills (2009)

³ “*History Matters: Path Dependence and innovation in British city-regions*”; NESTA (2008)

⁴ AIM (2008), quoted in “*Innovation by Adoption*”; NESTA (2008)

⁵ “*Innovation, trade and connectivity*”, Manchester Independent Economic Review (2009)

Figure x: A model of the components of a local innovation system



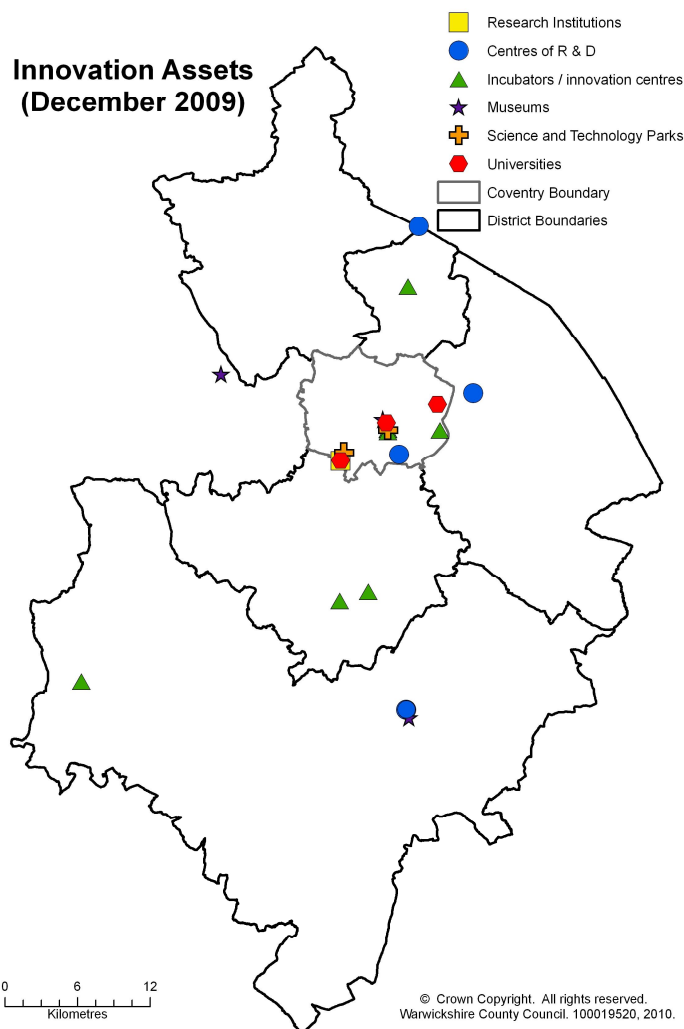
To determine the capacity of an area to **access new information**, we need to consider the extent to which our sub-regional businesses, individuals and institutions are connected to external markets and knowledge. Within businesses, this can be achieved through external networks crated through non-local supply chains, international joint ventures, exporting, and foreign investment. We have very limited hard data to evidence or compare the sub-region’s performance in this area, and is clearly something that needs to be researched further in due course. However, a qualitative review would suggest that the sub-region performs reasonably well in terms of exporting, has a good record in terms of foreign investment, and there are a number of global companies within the sub-region that would increase access to information. There is no doubt, though, that these external links could be increased and enhanced. With respect to the external links by the residents of the sub-region, it should be noted that Coventry is an extremely diverse city, which provides a real base and opportunity. Again, whether this potential is fully realised is unknown, but one would imagine that again more could be done. Finally, we must recognise the international relationships and research undertaken by the two universities within the sub-region (particularly the University of Warwick). These are key assets for the sub-region in terms of accessing new information and providing the base for innovation.

In terms of **anchoring information** in the sub-region, a key issue to consider is the level and nature of innovation-based institutions or assets that help identify, capture and make relevant to the local economy external information. Figure 2 below presents a map of the innovation assets within the sub-region. Whilst it is difficult to compare this set of assets to other areas or the “average” distribution, one can suggest that this looks a fairly strong picture for the sub-region. Another key aspect of this element of the innovation system is the extent of higher-level, knowledge-based occupations⁶ within the sub-regional economy. Overall, the sub-region has slightly above average levels of these knowledge-based occupations – 45.5% of all employees compared to 44.7% for England as a whole. Coventry (45.7%), Stratford

⁶ Higher level knowledge-based occupations are defined as: Managers & Senior Officials; Professional Occupations; and Associate Professional & Technical Occupations)

District (50.7%) and Warwick District (53.0%) have particularly high levels, while the north of the sub-region, particularly Nuneaton & Bedworth (33.2%), perform quite poorly on this indicator.

Figure 2: Innovation Assets in C&W sub-region



With respect to the capacity of the sub-regional economy to **diffuse new information**, research has suggested that it is the strength and scale of local business networks (particularly in terms of trading links). Unfortunately, we have very limited information about the level of “internal” (i.e. sub-regional) networking by businesses within Coventry & Warwickshire, and this is an area that would benefit from further research. However, research from elsewhere suggests that local networking is not strong within the UK⁷, and there are no reasons to think that this sub-region is currently any different. Having said that, there are a number of existing networks within the area (i.e. Coventry & Warwickshire First for the business & professional services sector; and the Coventry & Warwickshire Aerospace Forum) which show the potential to increase and improve trading links between local businesses.

⁷ See “*Innovation, trade and connectivity*”, Manchester Independent Economic Review (2009)

Other aspects to consider when looking at diffusion of information is the level of adoption of new technologies and processes by local businesses, and the extent of research centres (particularly Universities) and business collaboration. Again, there is limited data on this at the local level, and so it is hard to make a judgement – although it is recognised that both the universities in the sub-region have made significant efforts in recent years to increase and enhance business collaborations (but whether this is better or worse than other areas with university presence is not known). Finally, one can consider the skill level of the population (particularly higher level skills) as a proxy indicator for the capacity for new ideas to be diffused within and across the sub-region. Overall, the Coventry & Warwickshire area has slightly above average proportions of residents with a Level 4 qualification (a degree or equivalent) – 31.2% in 2008 compared to 30.5% for England as a whole. Levels are particularly high in the south of the sub-region, with Warwick and Stratford-on-Avon districts having rates of 43.7% and 37.3% respectively.

In terms of the actual commercial **exploitation of new information**, the key is looking at the number of new products and services generated and originated from businesses in this area. Unfortunately, again, we have no data on this to enable any effective analysis on this. As a proxy, however, we can look at the level and rate of growth of “Knowledge Intensive Sectors” (KIS) in the area. The sub-region as a whole has about average rates of employment in KIS – 57.6% of all employment are in these sectors compared to 57.7% for England (although rates are higher in Coventry (64%) than Warwickshire (54%)). However, growth in employment in knowledge-intensive sectors has been below average over the past ten years for the sub-region (growth of 11.3% in employment between 1998-2008, compared to 18.2% for England). Growth has been stronger in Warwickshire (18.1%) than Coventry (2.3%), and particularly high in the south of the county. New business starts in KIS in the sub-region (as a proportion of all new starts) has been lower than the England average (11.8% of new starts in 2009, compared with 15.4%), although again the south of the sub-region has itself seen stronger than average rates.

In summary, while there is a clear need to undertake some further research and analysis into the component parts of the innovation system in Coventry & Warwickshire, some general conclusions can be made. The sub-region is reasonably well connected to external markets which could lead to accessing new information (particularly through the universities), but undoubtedly the level and extent of external trade could be increased which would lead to an increased flow of information and ideas. The sub-region has a number of innovation assets that can be used to anchor this information, but it is likely that the overall levels of business-to-business networking and internal trade limits and inhibits the diffusion of innovation across the area. This has been noted as being a crucially important component of the local innovation system, and an area where more attention might usefully be paid. As a result, while we have no accurate measures of innovative activity in the sub-region, the proxy indicators of knowledge-intensive sectors suggest a lack of dynamism and growth, but with much stronger performance in the south of the sub-region compared to the central and northern areas.

Policy Implications:

- Further research is needed to better understand the local innovation system in the sub-region, particularly around the levels of external and internal trade, business networks, and business-university collaborations
- Greater focus and attention on the mechanisms to drive and enhance levels of innovation are required, especially with respect to local business networks and external connectivity.