



Evaluation of the past & future economic contribution of the UK Science Park Movement

Executive Summary

Prepared by ANGLE Technology

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This executive summary has been specially prepared by



ANGLE Technology Limited

for



in association with the



**small
business
service**

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Executive summary

Introduction

The United Kingdom Science Park Association (UKSPA), working in partnership with the Small Business Service (SBS), commissioned ANGLE Technology to undertake research to identify the nature of the additionality the science park movement brings to the performance of knowledge-based firms located on Science Parks in the UK. This report presents the findings of this research and provides specific insights into the:

- ◆ performance of a representative sample of science park tenants compared with similar firms located off science parks; and
- ◆ influence of regional and/or sub-regional locations on the performance of science park developments.

The recommendations focus firmly on the future and concentrate on two important strategic issues:

- ◆ stimulating the further development of successful, mature science parks; and
- ◆ facilitating the fast track development of new science parks.

Background to the UK science park movement

Since its establishment some forty years ago, the UK science park movement has developed to the extent that it now provides some 1,000,000m² of accommodation, housing more than 1,700 clients, who in turn employ more than 41,000 people. This data alone demonstrates that the science park movement is a significant feature of the UK's economic landscape.

There are currently 55 full members of UKSPA, with a further 7 associate parks under development. The diversity represented in the membership can be summarised by a number of factors including:

- ◆ **age since establishment** – there is a significant body of long established Science Parks with a similarly large group of recently established initiatives;
- ◆ **physical size** - from single multi-let buildings to major multi-site parks;
- ◆ **regional setting** - compact city centre sites to major campuses in mature settings;
- ◆ **services provided** – limited referral based signposting to full hands-on business creation and technology development packages;
- ◆ **ownership** – represented separately by, or as a combination of, academic bodies, economic development organisations and the private sector.

This diversity has led to very different rates and routes of development. As a consequence, there are wide regional variations in the provision of Science Park capacity in the UK that are at odds with the apparent potential client demand and the availability of other related regional infrastructure.

Results indicate that there has been a continued growth in Science Park provision in the UK over the last seven years. This growth appears to be well matched to demand with tenant occupancy rates being maintained well within the range expected for commercial property developments.

- ◆ mean annual vacancy rates ranging between 3.5% to 13%;
- ◆ mean annual new construction of 23,700m² per year;
- ◆ significant increase in investment in science park provision from the private sector and the economic development agencies, coupled with a declining proportion of total investment secured from local authorities, universities and tenants.

Science Park performance evaluation

The research investigated the effect of each of the following interacting factors on Science Park performance:

- ◆ the age of the science park since establishment;
- ◆ its physical location (i.e. on of off campus);
- ◆ the stage of development of the Science Park (defined by four phases, Start, Growth, Mature and Diversification, each with their own specific characteristics);
- ◆ the state of maturity of the knowledge economy in the sub-region immediately around the Science Park, defined as:
 - **Knowledge Heartland Economy** where all elements of the sub regional knowledge economy are fully established and pathways working well;
 - **Developing Knowledge Economy** where most elements of the sub regional knowledge economy are established with some pathway or capacity restrictions;
 - **Economic Development Priority Area** where major elements of the sub regional knowledge economy and/or pathways are either missing or constrained.

The results showed that the most important single factor affecting the performance of individual Science Parks is the state of the Sub Regional Knowledge Economy within which they are operating.

In addition, a number of important points and insights were obtained from interviewing Science Park managers which are summarised below:

- ◆ In general each Science Park has a unique situation, however there was wide agreement that the success of many Science Parks relies on the effective marketing of two so-called 'golden products'.
- ◆ The achievements of the science park movement have not gone unnoticed and a number of sophisticated property investors have invested in Science Parks with good results in recent times.
- ◆ Many science park managers are concerned by the apparent contradictions between local planning policy and the regions economic development objectives.
- ◆ There is an increasingly limited number of potential sites available for future science park development.
- ◆ There is a concern that the value of 'Science Park' as a brand has been substantially eroded over the years by its inappropriate application. It is felt that there is a need for UKSPA as an organisation to refresh and reposition 'Science Park' to enhance real brand value.
- ◆ It has become increasingly challenging for Science Parks to add significant value by means of their service offering.

The main points arising from the interviews with senior representatives of Science Park stakeholders and sponsors were:

- ◆ Central Government recognises the important role that science parks can play in a successful knowledge based economy and helping to make the UK the best place in the world to start and grow a business. However, it views the establishment of science parks as market led initiatives and considers that the future development of Science Parks should continue along these lines.
- ◆ For many university-owned science parks the key issues are still driven by the physical attributes of a Science Park. However, it is apparent that there has been an increased interest in the contribution that Science Parks can make to their economic development agenda. This has resulted in several imaginative approaches to the application of surplus revenues from Higher Education Institution (HEI) led Science Parks to, for example, establish seed corn or proof of concept funds for spin-out companies.
- ◆ In the context of Regional Economic and Innovation Strategies for the English regions and devolved administrations, the interview results show that there is a considerable variation in Regional attitudes to Science Parks across the UK.

Comparative company performance

The company research programme involved surveying senior managers of 876 companies, 617 of whom were based on Science Parks. The remaining 259 surveys were conducted with a sample of companies not located on Science Parks. This sample was derived so as to provide proportional representation comparable to that of the UKSPA tenant population based on company size by employees and sector representation.

The survey was designed to investigate the comparative economic and innovation performance of the two sample sets and, for companies located on Science Parks, issues related to service provision and locational characteristics. Key findings for each category are summarised below:

◆ **company performance**

- Science Park based companies have higher growth rates than similar companies at other locations. In particular:
 - a higher proportion of On-park companies reported having 10% more Full Time Equivalent employees (FTEs) than Off-park companies both 1 year ago and 3 years ago;
 - over the 3 year period, a significantly greater number of On-park companies reported having turnovers higher than 3 years ago in comparison to Off-park companies.
- On-park companies utilised venture capital, public sector and angel finance to establish their businesses to a significantly higher degree than Off-park companies and in the last 12 months On-park companies utilised a higher proportion of venture capital than their Off-park counterparts.
- On-park companies report that access to finance is less of a problem than their Off-park counterparts.
- More companies located Off-park feel that access to finance is constraining their business.

◆ **innovation performance**

- In terms of innovation performance there are significant differences between similar companies located on and off science parks:
 - Over the past 1 and 3 year periods, Off-park New Technology Based Firms (NTBFs) launched nearly twice as many new products on average than On-park NTBFs.
 - On-park NTBFs launched significantly more new services than their off-park counterparts over the 3 year period.
 - On-park NTBFs have a significantly higher proportion of Qualified Scientists and Engineers (QSEs) than Off-park companies.
- There was no difference between the intensity of investment in R&D between the On-park and Off-Park sample groups.
- In terms of innovation performance there are significant differences between Science Park companies depending on their sub regional economic environment. In particular:

- On-park NTBFs located in Knowledge Heartland Economy Areas produce almost double the number of patent applications than On-park NTBFs in Developing Knowledge and Economic Development Priority Areas.
- NTBFs located in Economic Development Priority Areas launched the most products of all regional areas.

◆ **location characteristics and perceived benefits**

- Science parks attract a statistically higher proportion of NTBFs than Off-park locations.
- The most important factors in attracting clients to a Science Park location are the physical attributes of a Science Park rather than the support service infrastructure.
- 67% of companies considered that their Science Park location had added to their overall market image.
- Economic Development Priority Areas have significantly fewer NTBFs On-park than in Knowledge Heartland Economy or Developing Knowledge Economy Areas.

◆ **Science Park service provisions and usage**

- On-park organisations made more use of the basic office services than the more specialised business and technology services.
- The majority of organisations do not feel that a Science Park location provides them with any perceived benefits in relation to:
 - access to new markets, technological development, research linkages and capital networks/finance;
 - competitors located off Science Parks;
 - access to technology transfer opportunities;
 - business networks, distribution channels, supply chains and On-park business interactions.
- 41% of the On-park companies had a “link” with a university or research institution and of these, 90% indicated that their link was with a local university or research institution.
- Informal connections with academics and universities were identified as the most common link but only 26% of On-Park companies with linkages to universities and research institutions considered them to be strong.

Summary

The results confirm that Science Parks play a positive role in supporting the growth of technology-related businesses, and hence wealth creation, in the UK as evidenced by the:

- ◆ steady growth of tenant companies, which, on average, have increased in size as measured by number of employees and floor area whilst maintaining their level of investment in R&D;
- ◆ enhanced growth in employment for science park based businesses compared with similar companies at other locations;
- ◆ higher proportion of qualified scientists and engineers employed by science park based companies;
- ◆ growing relative proportion of independent/single site companies.

However, the analysis also indicates that, contrary to the expectations of many of their founders, Science Parks are failing to perform as well as might be expected with regard to:

- ◆ the promotion of HEI/industry linkages;
- ◆ the transfer of technology from HEIs to Science Park firms.

Future development needs of the UK Science Park Movement

This study demonstrates that clients perceive that the value that Science Parks currently deliver is based on the provision of distinctive property based solutions that meet the particular needs of knowledge-based businesses at the various stages of their evolution.

However, the science park movement places a large emphasis on the delivery of soft infrastructure support activities. The recommendations summarised below are intended to set out the means by which the client perceptions, and/or the actual value, of the soft infrastructure service offerings can be enhanced in order to enable the UK's Science Parks to achieve their full potential:

- ◆ **Science Parks as a brand** - It is recommended that UKSPA re-examine the market positioning of the "Science Park" brand in order to ensure that the key constituencies fully appreciate what precisely the Science Park brand represents and how it can be of mutual benefit to all parties.
- ◆ **Science Parks and the commercial property sector** - It is recommended that UKSPA takes a positive lead in welcoming, encouraging and fostering the involvement of the commercial property sector in science park developments and the science park movement.
- ◆ **Science Parks and economic development** - It is recommended that UKSPA should campaign vigorously to ensure that the proven benefits and track record of Science Parks in relation to the innovation agenda are clearly understood and integrated into future policy initiatives.

- ◆ **Science Parks and research commercialisation** - It is recommended that UKSPA develops a range of best practice, training, and case study materials, possibly in collaboration with other representative organisations, to support its members in enhancing their technology transfer and commercialisation management processes.
- ◆ **Science Parks' Client services** - It is recommended that UKSPA should take the lead in investigating the provision of value added services for tenants using, for example, the combined purchasing power of its members, that have real and tangible bottom line impact on the tenants of UKSPA's member parks.
- ◆ **Science Parks and the client value proposition** - It is recommended that UKSPA develops for its members and others a clear Client Value Proposition concept for UK Science Parks with a view to quantifying the benefits that tenants should expect to accrue.

Conclusions

This research shows that Science Parks make a significant and distinctive contribution to the UK's economic infrastructure. The accommodation they provide is valued by tenants and the overall commercial performance of the companies based on them is better than similar firms located elsewhere.

There are however a number of specific areas where there is potential for the science park movement to enhance its contribution to the development of the knowledge-based economy in the UK. The recommendations presented in this report are aimed at closing the gap between the potential and actual economic contribution made by science parks in the UK.

It is recommended that the development of these proposals, from strategy into action, should be led by UKSPA in close association with its members. It is only through the commitment, support and direction of the member parks that these matters will be effectively addressed.