

Report to Arlington

Realising Oxford's potential

Economic case for the development of
land at Peartree

November 2006



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Executive Summary

1. In July 2006 SQW Ltd was commissioned to examine the economic case for development of the Peartree site as a business park with unrestricted B1 planning permission. This report represents the findings of this study. It considers the economic case in a wider context which begins to explore the potential contribution of Oxford to realising local, regional and national ambitions for sustainable, knowledge-based economic development.

Key findings

2. Overall, we feel that there is a strong economic case for the development of land at the Peartree site on the northern edge of Oxford. We believe that the evidence presented in this report supports the view that:
 - Land with an unrestricted B1 planning consent, and located to be accessible by both public and private transport, is required in order to enable the medium and long term growth of the high-technology cluster in Oxford
 - Oxfordshire would benefit from a focused rather than dispersed approach to economic development
 - Oxford requires balanced economic development that meets the needs of all its citizens
3. The following key findings have led us to these conclusions:

Oxford is a unique asset to the South East and the UK

4. Oxford and its hinterland has been transformed in the last 30 years from a heavy dependence on traditional industries to a knowledge-based economy which is considered to be one of Europe's leading high-tech centres. The academic excellence and research strengths of the University of Oxford and its historic city centre have made the city a prime tourist destination and created a 'global brand'. As a result, Oxford is widely considered to be a key driver of economic growth in the South East which, in turn, is one of the main engines of growth of the UK economy. Oxford's future development needs to be considered in this context and its unique role must be reflected in policies which seek to make the most of this asset rather than stifle it, and which promote sustainable and sensitive forms of development which recognise the economic and historic significance of Oxford. This is particularly important if, as forecast, economic growth in the UK is likely to slow in future.

Growth in the high-tech sector requires a growing and supportive high-tech cluster

5. The 'Cambridge Phenomenon' demonstrates the importance of considering the growth of high-tech businesses as part of a broader cluster which includes the supporting sectors, land, property and infrastructure. It is essential that policy makers recognise that a healthy high-

tech sector requires a healthy cluster. Planning policies must therefore ensure that there is sufficient land for both the R&D based activities at the core of the high tech cluster, and for a range of supporting business, financial and technical services which are essential for realising the core's potential, as well as to provide job opportunities for all Oxford's residents. These service activities typically require B1 business space. Providing for them on the periphery of the city will free up space for R&D based activities to be located close to the university in the city centre.

High-tech growth must not lead to complacency

6. Oxford's high-tech economy grew rapidly between 1991 and 2001, and is now considered to be one of Europe's leading high-tech centres. However, the recent decline of the high-tech sector, combined with high commercial property costs and land and labour constraints outlined in the Oxford Employment Land Study, highlight that Oxford cannot afford to become complacent; past success in the establishment and growth of a high-tech cluster does not guarantee future competitiveness. This vulnerability, together with the relative importance of the supporting sectors within the Oxford economy, must be reflected in employment land allocations.

Oxford requires balanced growth

7. The importance of the Oxford's research base and the emergence of the high-tech sector as a cornerstone of the economy have been widely recognised. However, even with Oxford's relatively high proportion of employees within the high-tech sector it is important to remember that a huge majority (approximately 92%) of the workforce in the City of Oxford is employed in 'non-high-tech' activities. Oxford requires balanced economic development both to support high-tech activities and to meet the needs of all its citizens.

Oxford would benefit from a greater range of property provision

8. Comparisons between Oxford and Cambridge show that, despite facing similar issues relating to high-tech growth and land constraints, the range of provision differs considerably. Cambridge offers a range of medium sized business parks in the city and to the north, south and west. In contrast, the vast majority of R&D and general business space in Oxford is to the south of the city. This means that there is a limited choice in terms of business space, especially if Oxford is to meet the varied requirements of the whole business community. The high-tech sector has specific needs and the mix of recent spin-outs and established multinational companies suggests this diversity should be reflected in the choice and type of sites and units available. This is also true in the expanding support sector where general B1 space needs to meet the requirements of inward investors and major HQ functions alongside smaller service companies. As a result, there is a strong case that the Oxford economy could benefit from increased diversity in terms of size, type and location of its business parks.

Location of growth: Concentrated vs. dispersed

9. There are numerous parallels between the planning issues in Oxford and Cambridge. Both are home to world famous Universities which (together with their Colleges) are significant landowners, and both face the common challenges of supporting growth of the high-tech sector in the context of a constrained, historically important, city centre environment. However, the strategic policy response to this combination of opportunities and problems is completely different. In the Cambridge sub region, the majority of new development – of both housing and employment – is planned to be focused on Cambridge, in the form of new communities on the edge of the city (which involves adjustments to the inner edge of the Green Belt), in a major new settlement close to the city (Northstowe), and in the surrounding market towns. In contrast, the Draft SE Plan proposes to retain the strategy of focusing most new development in the market towns of Bicester, Didcot, Wantage and Grove, and within Oxford mainly on brownfield land. No expansion of Oxford, or review of the Green Belt boundaries, is envisaged.
10. Planning policies in the Cambridge sub region have switched from dispersal of growth to its concentration in and around the city in order to create a more sustainable settlement pattern. Policies to disperse growth of the high tech cluster around the sub region did not work in Cambridge, and will not provide a sustainable solution for Oxford. We feel therefore, that there is a strong case for more of central Oxfordshire's growth to be concentrated on the fringes of the city. This will eventually require a review of Green Belt boundaries, but in the short term it would be sensible to develop safeguarded land first. We would therefore endorse the recommendations of Nathaniel Lichfield and Partners that future allocations should focus on the ring road with access to the A34 and more specifically at the Peartree safeguarded site. We would agree with the Lichfield conclusion that “this would help maintain diversity of activities and employment.”¹

¹ Oxford Employment Land Study 2006 - Nathaniel Lichfield and Partners p95

1: Introduction

- 1.1 In July 2006 SQW Ltd was commissioned to examine the economic case for development of the Peartree site as a business park with unrestricted B1 planning permission. This task was undertaken over a four month period from July to October 2006 and this report represents the findings of this study.
- 1.2 This report focuses specifically on the economic case for the Peartree site, but considers this in a wider context, which begins to explore the potential contribution of Oxford to realising local, regional and national ambitions for sustainable, knowledge-based economic development. It could, therefore, provide basis for a more ambitious study which fully explores this potential and how it should be realised.

Methodology

- 1.3 The report has been structured in order to respond to four specific issues identified in discussion with Arlington during the inception stage of the project.

Oxford's unique role in the sub regional, regional and national economy (Chapter Two)

- 1.4 Our first task was to set the context for a discussion of economic development issues in Oxford by considering the city's unique role in the sub regional, regional and national economy, the city's international profile and the strength of the Oxford 'brand'. This was achieved by a detailed desk review of relevant local, regional and national economic development policies and an examination of relevant data. It also drew upon the team's local knowledge of Oxford and its environs.

Would Oxfordshire benefit from a focused rather than dispersed approach to economic development? (Chapter Three)

- 1.5 Arlington also wanted to consider whether the Oxford economy would benefit from a change from sub regional planning policies which encourage dispersal to policies encouraging concentration in and around the urban area of Oxford. GVA Grimley, as planning consultants to Arlington, has undertaken detailed work on strategic and local planning policies. We therefore focused on a comparison between strategic policies in the Cambridge sub region and those for central Oxfordshire, in order to illustrate the differences and potential benefits of a change in policies for central Oxfordshire.
- 1.6 There are clear parallels between the two cities in terms of their sub regional geographies, academic traditions and strengths, links to advanced medical care and research and their status as historical centres and tourist destinations. Both have also become key locations for high-technology and knowledge-based industries. However, the strategic policy response to this combination of opportunities and problems and the implications of growth has been

completely different. In Chapter Three we outline the reasons for the current planning policies for Cambridge and the possible implications for Oxford.

Is unrestricted B1 planning consent required in order to enable the medium and long term growth of the high-technology sector in Oxford? (Chapter Four)

- 1.7 This section of the report considers the need to make provision for development of the high-tech cluster as a whole (including financial and business services, corporate research, administrative support etc), not just to meet the immediate property and land requirements of high-tech businesses which form the core of the cluster.
- 1.8 Central to this element of research was a detailed comparator analysis of the development of Cambridge and Oxford in terms of a) employment structure and change, distinguishing between the high-tech sector and support sectors, and b) property provision, including the mix of specialist high-tech and general business parks and types of firms they accommodate.

How can Oxford ensure balanced economic development that meets the needs of all its citizens? (Chapter Five)

- 1.9 Finally, this report recognises the need for a balanced approach to economic development in Oxford and examines how this can be best achieved. Chapter Five provides an overview of the Oxford economy, including consideration of workforce attributes, levels of deprivation and the requirements of high-tech businesses. It considers the view that the needs of the local economy cannot be met by the high-technology sector alone, and that sufficient provision must be made for general business development which provides employment for all of Oxford's citizens. On that basis, the location of general business park provision must be considered.
- 1.10 There is a case for such provision in a location which is accessible using both public and private transport on the periphery of the city in order to facilitate the movement of general office uses out of the central area, thereby freeing up space for high tech businesses which need to be located close to the University. This would help to avoid unnecessary commuting into the city centre, and may attract knowledge based activities from elsewhere which want an accessible Oxford location where they can draw on the highly qualified workforce, but do not require immediate proximity to a particular facility. In the long term, additional provision for various types of business space may require a review of the inner boundary of the Green Belt. However, to meet short to medium term requirements for additional land, safeguarded land should be bought forward for development first.

2: Oxford's unique role in the sub regional, regional and national economy

A city of international importance...

- 2.1 Oxford is a city known the world over as home to the English-speaking world's oldest University. The academic excellence and research strengths of Oxford University and the historic city centre have resulted in Oxford becoming a global brand and a key UK tourist destination, attracting over 5 million visitors per annum. In recent decades Oxfordshire's economy has been transformed from a heavy dependence on agriculture, brewing, the motor industry and the direct impacts of Higher Education, to a mixed economy with an internationally significant high-tech sector. Oxford is now renowned as one Europe's leading centres for innovation, high-tech and knowledge-based economic activity.

World class reputation for academic study and research

- 2.2 The University of Oxford is regarded as one of a very small number of world class universities and has over 6,000 academic staff and postgraduate students working on research. Indeed, the 2001 RAE² exercise revealed that Oxford has more academic staff whose departments were rated 5 or 5* than any other university in the UK. The University is synonymous with leading edge research in a diverse range of academic fields including pharmacology, chemistry, biochemistry, maths, economics and the social sciences. The university is also engaged in world-leading medical research through the Division of Medical Sciences and the Oxford Radcliffe Teaching Hospital.
- 2.3 The University of Oxford was second only in the UK to Cambridge in terms of income from research grants and contracts in 2004/05, with £182m generated. This represents 6.4% of funding across all HEIs³. The University is part of the 'Golden Triangle' (Oxford, Cambridge and the London Universities of UCL and Imperial) which together account for a quarter of all research income of UK HEIs. An interesting international perspective is provided by recent research by the Institute of Higher Education, Shanghai Jiao Tong University (2006) which ranked Oxford in the top ten of the world's universities, and second (behind Cambridge) in Europe⁴.
- 2.4 The University is also establishing a growing reputation for generating spin-out companies. ISIS Innovation Ltd, the University's technology transfer company, was established in 1988 and expanded its activities in 1997. Since this time, 48 companies have spun out of the University⁵. In addition to encouraging spin-outs, ISIS is also responsible for the licensing of University research outputs, patenting of intellectual property and some sales of materials

² RAE = Research Assessment Exercise

³ Data from Higher Education Statistics Agency (HESA) – excluding HEFCE block grant

⁴ Top 500 World Universities - Institute of Higher Education, Shanghai Jiao Tong University (2006). It should be noted that the rankings in this research tend to be biased towards the natural sciences.

⁵ <http://www.isis-innovation.com>

developed in the University's laboratories. Since March 2005, six new companies have spun out and 45 licence, option and material sale agreements have been signed⁶.

- 2.5 In addition to the University of Oxford, the city and the surrounding area can boast an array of other research strengths. Oxford Brookes University has particular expertise in its School of Technology (including engineering and computing) and the School of Biological and Molecular Sciences. Oxford Brookes also strongly promotes interaction with the business community through its Research Services and Business Development Directorate.
- 2.6 Other key research centres include Harwell, a former government atomic research centre and the nearby Rutherford-Appleton Laboratory. The former is home to a number of high-technology companies the largest of which is AEA Technology. AEA employs over 1,000 people, 50% of whom are graduate scientists or engineers, in the development of technological solutions for rail, utilities, manufacturing and oil and gas sectors. The Rutherford-Appleton Laboratory is located on an 80 acre site at Chilton near Harwell and is operated by the Council for Central Laboratories of the Research Council (CCLRC). It is the world's leading pulsed neutron and muon source for materials and structures research and has high power lasers for various research including astrophysics and fusion energy⁷. It will also be the site of the Diamond Project, the UK's largest investment in science for 30 years, which will produce x-ray, infrared and ultra-violet beams of exceptional brightness enabling world-leading molecular research to be undertaken. Culham is another UKAEA site which has developed commercial research specialisms in fusion engineering.

The high-tech economy

- 2.7 Oxford and its hinterland have experienced rapid growth in its high-tech economy over the last fifteen years. According to ABI data, employment in the high-tech sector⁸ increased 116% in 10 years, from 18,512 in 1991 to 39,980 in 2001. The number of high-tech workplaces has also increased 60% in the same time period. Whilst employment has stabilised and even shown signs of decline in the last three years in Oxford and its surroundings, there are few places in the world that have exhibited more impressive sustained growth in leading edge high-technologies.
- 2.8 To put the importance of the sector in a broader geographical perspective, data from 2000 illustrates that Berkshire, Buckinghamshire and Oxfordshire was ranked 6th in Europe (of 209 NUTS2⁹ areas) in terms of employment in high-tech sectors as proportion of total employment. At this time the percentage of the workforce employed in the high-tech sector was 18.3% which contrasts with the UK average of 11.7% and EU average of 11.1% (based on the 15 member states in 2000).

⁶ ISIS Innovation – Annual Report 2006

⁷ Enterprising Oxford – OEO, Lawton Smith et al. 2003

⁸ High-tech sector as defined by Butchart (1987) definition which was developed during the mid 1980s for the DTI. High-tech sectors, including both manufacturing and services, are identified which have an R&D intensity of at least 20% above the all-industry average, and an above average proportion of qualified scientists and engineers.

⁹ Nomenclature of territorial units for statistics (NUTS) is a geocode standard for referencing the administrative division of countries for statistical purposes in the European Union. NUTS 1 areas in England are the Government Office Regions. Fourteen NUTS3 areas make up the six NUTS2 areas of the South East which are Berkshire, Buckinghamshire and Oxfordshire, Surrey, East and West Sussex, Hampshire and Isle of Wight, and Kent.

- 2.9 More recent data shows that the Berkshire, Buckinghamshire and Oxfordshire area remains an internationally important high-tech cluster. By 2005 the area was ranked 19th (of expanded community of 268 NUTS2 regions) both in terms of total employment in the sector and high-tech employment as a percentage of all employment¹⁰ as illustrated in Table 2-1.

Table 2-1: Proportion of employees in high-tech sectors in the top 10 NUTS2 regions, 2005

Ranking	Region	Numbers employed in the high-tech sector	% of all employees in the high-tech sector
1	Lombardia	602,500	14.4
2	Île de France	596,600	12.7
3	Stuttgart	448,600	24.1
4	Cataluña	361,000	11
5	Oberbayern	336,300	16.3
6	Denmark	300,600	11
7	Piemonte	292,000	16
8	Comunidad de Madrid	286,900	10
9	Rhône-Alpes	285,700	11
10	Darmstadt	280,000	16.1
19	Berkshire, Bucks and Oxfordshire	165,200	14.6

Source: Eurostat, Community Labour Force Survey, 2005

- 2.10 Looking at data for Oxfordshire only, and using Butchart's (1987) definition of high-tech industry (which constitutes both high-tech manufacturing and high-tech services), by 2003 over 1,400 companies had established in Oxfordshire employing approximately 37,000 people¹¹. In all, Oxfordshire is in a good position to make full use of its innovation and commercial technology potential, continuing to build new, highly specialised clusters and exploit and maximise the commercial opportunities arising.

Oxfordshire's home-grown, high-tech business community

- 2.11 A key characteristic of the Oxfordshire high-tech economy has been the emergence of home grown enterprises which are world leaders in their field. These businesses operate in a range of sectors including manufacturing (e.g. Oxford Instruments Group, Solid State Logic RM plc, Bookham Technology), motorsport, bioscience (e.g. Oxford GlycoSciences plc, Evotec OAI, British Biotech) and IT (e.g. Sophos Plc). A strong infrastructure has developed to support technology-based entrepreneurs with successful investment and business support networks in place. Oxford's two universities also have a key role in encouraging enterprise and entrepreneurship and have developed strong technology transfer mechanisms. This

¹⁰ This drop in ranking is indicative the growth of the sector in other regions and a reduction in the total number of high-tech employees in Berkshire, Buckinghamshire and Oxfordshire between 2000 and 2005. This decline may be a reflection of the broad definition of 'high-tech' used in the 'Eurostat' data¹⁰ which includes 'medium technology manufacturing' but also reflects a UK-wide downturn in the sector in employment terms since 2002-03.

¹¹ Please note this figure is not directly comparable with the data for the Berkshire, Buckinghamshire and Oxfordshire due to different definitions of high tech used in the two data sources.

supportive environment has assisted the growth of numerous small and medium sized companies. These networks have been reinforced by the development of appropriate business space at business innovation centres across the county – a particularly strong characteristic of Oxfordshire due to the work of the Oxford Trust (established by the founder of Oxford Instruments Group) and its spin out company, Oxford Innovation (now part of the SQW Group).

A key driver of the UK economy...

- 2.12 The growth of the high-tech sector, nourished by linkages to world class academic institutions and medical research, now means that Oxford can be considered as a key economic resource within the UK economy. Forecasts indicate that the UK economy is likely to grow more slowly in the next ten years than in the previous ten years. Furthermore, during this period the UK economy (and the global economy as a whole) will have to anticipate and respond to climate change. This reinforces the need to make the most of assets which can drive the national economy and support innovation in, and adaptation of, existing production and service activities through the commercialisation of new technologies and know how.
- 2.13 At regional level, the South East needs to “maintain its competitiveness in the face of intensifying global competition¹²”. As such it is important that the economic potential of key assets such as Oxford are realised. As a result, the city and its environs have been positioned at the heart of a number of concepts and models to further develop high-tech activity in the UK.

A Diamond in the South East

- 2.14 The South East region, together with London and the East of England, forms the key economic driver of the UK economy. According to the UK Competitiveness Index 2005¹³ the South East is ranked the second most competitive region, marginally behind London. Based on a UK index score of 100, the South East scored 114.6 compared to London’s 114.7, and the gap between South East and London has been closing between 1997 and 2000. The South East now accounts for more than 50% of the total net contribution to the Exchequer, with London and the East of England the only other regions to make net contributions¹⁴. A number of economic indicators can be used to show the relative strength of the South East region compared to other UK regions. Between 1997 and 2003 the South East exhibited:
- The fastest growth in GVA per head (35.3%)
 - The second highest absolute level of GVA per head (£18,400)
 - The highest economic activity rate (82.9%)
 - The lowest unemployment rate (4.2%)
 - The second highest household income per head (£14,300).

¹² The Regional Economic Strategy for the South East (2006-2016) – A framework for sustainable prosperity

¹³ UK Competitiveness Index 2005: The Changing State of the Nation 1997-2005

¹⁴ Regional Economic Strategy for the South East of England Draft 2006

- 2.15 Oxfordshire is undoubtedly one of the shining lights in the successful South East economy. In 2003, the GVA per head in Oxfordshire was 14% higher than the South East average and 22% above the English average¹⁵. Within the South East region, Oxfordshire has the fourth highest GVA per head out of the 14 NUTS3 areas, behind only Berkshire, Milton Keynes and Surrey. The growth in GVA per head between 1995 and 2003 was 63% in Oxfordshire, above both the regional and national averages of 58% and 51%, respectively. Growth in employment in the high-tech sector between 1991 and 2000 stood at 141% in Oxfordshire compared to 105% in Berkshire and 52.7% in Cambridge.
- 2.16 The importance of Oxfordshire, and more specifically Oxford, to the regional economy is acknowledged in the Regional Economic Strategy. Oxford is identified as one of eight *diamonds for growth*. The RES defines these diamonds as “cities and major towns which, with their hinterlands, can act as a catalyst to stimulate prosperity”¹⁶. Oxford offers a pool of skilled people, advanced businesses, knowledge, connectivity, networking, creativity and culture, all supporting this notion of an economic catalyst. The RES therefore puts emphasis on the need to exploit the university base and global networks of the region, increasing the number of companies working internationally, and ensuring efficient knowledge and technology transfer. SEEDA states that the RES will aim to provide business with opportunities to develop new and innovative knowledge-based products and services which are needed to compete in the global marketplace.

The Oxford-Cambridge Arc

- 2.17 The high-tech clusters in Oxford and Cambridge have led to the development of the Oxford-Cambridge Arc concept which aims to improve the economic wealth of Oxford, Buckinghamshire, Milton Keynes, Bedfordshire and Luton, Northamptonshire and Cambridge. It has been estimated that the Oxford-Cambridge Arc contributes 5% of the national GVA and as the Arc develops, further high-tech spinouts, innovation networks and a larger highly skilled workforce are expected.

Oxford at the heart of a Super Cluster?

- 2.18 A recent report by Library House¹⁷ suggests that, on its own, Cambridge is unlikely to develop into a technology cluster which can rival the world’s leading clusters. The report therefore makes the case for strengthening knowledge and infrastructure connections between Cambridge, Oxford, Reading and London to form a ‘Super Cluster’. Whilst this is an early stage concept it may prove to be more attractive to the business community than the Arc. In any case, both the Arc and the Super Cluster concepts reinforce the view that Oxford forms a key part of the development of the largest high-tech cluster in the UK.

¹⁵ Oxford Economic Observatory (OEO) Briefing Paper– Recent changes in the Oxfordshire Economy - January 2006

¹⁶ South East Regional Economic Strategy – Draft 2006.

¹⁷ “The Super Cluster Question: The Cambridge Cluster Report 2006” – Library House

The importance of Oxford to the sub region

- 2.19 Whilst it is not possible to fully attribute economic growth in the rest of Oxfordshire to the academic and subsequent commercial strengths in Oxford, the city has undoubtedly been a key driver within the sub region. This is especially true when considering high-tech activities. Many of the high-technology workplaces may be distributed beyond the immediate city boundary but there can be little doubt that the research strengths, highly skilled graduates and reputation of Oxford (both academic and commercial) have encouraged the growth of high-tech businesses elsewhere in Oxfordshire.
- 2.20 Although the draft South East Plan (2006-2026) favours the development of the outer towns of Oxford, it also recognises the key economic role of Oxford stating “there is a need to capitalise on the unique potential of Oxford as a world-class university city at the centre of the sub region, while taking into account the constraints of the greenbelt and the need to improve housing availability and affordability.” However, more generally the draft South East Plan provides limited acknowledgement of the role of Oxford as a key centre for future growth in the Region. This contrasts starkly with the East of England Plan which outlines a vision for the Cambridge sub region to ensure that it continues to “develop as a centre of excellence and a world leader in the fields of higher education and research and foster the dynamism, prosperity and further expansion of the knowledge-based economy.¹⁸” This is then reflected in policies to enable more sustainable patterns of growth in and around Cambridge.

Summary

- 2.21 Oxford is a name synonymous with world-class academic and applied research and has developed into one of the UK’s prime high-tech clusters. It is considered the economic driving force of the sub region, a ‘diamond for growth’ in the South East region and is at the heart of a range of initiatives to foster innovation. The range and volume of leading-edge research, higher than average GVA per head, low unemployment rates and the growth of the high-tech cluster all highlight the major contribution that the Oxford sub region is making to the South East and UK economies. As such, it should be considered as a unique asset which, if developed appropriately, will have immense benefits for the region and the nation as a whole.
- 2.22 As has been illustrated, Oxford has a high productivity economy, and one with potential for substantial additional productivity gains. Furthermore, much of the locally generated applied research has the potential to provide productivity gains elsewhere in the economy – for example, in medicine, energy generation and advanced manufacturing processes including high volume vehicle production. Oxford’s success therefore has positive implications for economic growth regionally and nationally.
- 2.23 The Treasury has emphasised the importance of the five drivers of productivity: investment in physical capital, skills in the workforce, innovation, competition and enterprise. If Oxford and its hinterland are to continue to grow then each of these drivers must be addressed. This is emphasised in SQW’s analysis of the high tech economy¹⁹ (see diagram 3.1). It is essential

¹⁸ East of England Plan, December 2004

¹⁹ The Cambridge Phenomenon Revisited – SQW Ltd, 2000.

that Oxford is able to maintain and improve upon the existing capital stock, including business premises. If appropriate high quality space is not available then Oxford will become less competitive. This provision must reflect the requirements of the local economy, allowing for the growth of both high-tech and general business sectors.

- 2.24 Investment in the city's physical capital is also closely linked to innovation and enterprise. As described in greater detail in Chapter Four of this report, innovation through research and high-tech activities has transformed the city economy. However, in order to maximise the commercial benefit of these innovations a network of support services has developed. Failure to invest in physical capital for the growth of these support services (that in planning terms would be considered B1a and to a lesser extent, B1c) as well as high-tech and research activity may hamstring enterprise growth and stifle innovation in the medium to long term.
- 2.25 The recent decline in employment in the high-tech sector, both nationally and in Oxford (see Chapter Four), should act as a warning to policy makers that the successes of the past must not lead to complacency for the future. This dip is most likely a hangover from the dot-com collapse and subsequent reductions in the availability of venture capital, but it emphasises the need for Oxford to make the most of its competitive advantages and to look for practical solutions to improve its weaknesses such as land and labour constraints.

3: Would Oxfordshire benefit from a focused rather than dispersed approach to economic development?

- 3.1 This section compares strategic planning policies in Oxford and Cambridge and examines the merits of a change from sub regional planning policies which encourage dispersal to policies encouraging concentration in and around the urban area of Oxford.
- 3.2 The Cambridge sub region consists of Cambridge and the ring of market towns surrounding it. The population of the sub region²⁰ was 478,400 in 2001, and it is expected to grow by 22% to 584,000 by 2021. The Cambridgeshire and Peterborough Structure Plan (adopted 2003) describes the sub region as “the focus for a dynamic economy founded on a strong service sector, an international reputation as a centre for education and research and rapidly growing clusters of high-technology industries. These have strong links to Cambridge University, the advanced medical care, teaching and research facilities at Addenbrooke’s Hospital, and a range of leading-edge research centres. New business formation and inward investment is high.”
- 3.3 This description has very strong parallels to the statement in the Draft South East Plan (Section E7, paragraph 1.2) about the “unique potential of the [Central Oxfordshire] sub region’s dynamic and innovative economy, including its role as an international centre for education and innovation”.
- 3.4 There are also other parallels: for example, in both sub regions there is an acknowledged need to protect the character and setting of the historic cities at their centre; both sub regions have suffered from a lack of investment in infrastructure to support economic and population growth; and in both there is a need to improve housing availability and affordability (Cambridgeshire Structure Plan, paragraphs 9.3 to 9.7; Draft SE Plan, Section E7 paragraph 1.2).
- 3.5 However, the strategic policy response to this combination of opportunities and problems is completely different. In the Cambridge sub region, the majority of new development – of both housing and employment - will be focused on Cambridge, in the form of new communities on the edge of the city and in one or more new settlements and, secondly, in the Market Towns. Following the Structure Plan adoption, the inner boundary of the Statutory Green Belt around Cambridge was reviewed, and where necessary areas were removed from Green Belt designation to allow for the development of these new communities. In contrast, the Draft SE Plan proposes to retain the strategy of focusing most new development in the market towns of Bicester, Didcot, Wantage and Grove, and within Oxford mainly on brownfield land. No expansion of Oxford, or review of the Green Belt boundaries, is envisaged.

²⁰ As defined in the Draft East of England Plan, comprising the local authority districts of Cambridge, East Cambridgeshire, Huntingdonshire and South Cambridgeshire

- 3.6 This contrast is a recent phenomenon. Until the 2003 Cambridgeshire and Peterborough Structure Plan, the policies for the Cambridge sub region were much more like those for central Oxfordshire, with most development being encouraged to locate in the market towns and the historical size and setting of Cambridge being closely protected by the Green Belt. So why did things change in 2003? The Cambridgeshire and Peterborough Structure Plan provides the explanation. Within the context of an objective to realise the potential of the sub region for sustainable growth, it states that:
- 3.7 “Job growth within the sub region has been high, averaging over 4,000 per year. Most growth has been concentrated in Cambridge and South Cambridgeshire, mainly on the fringe of the city. There has also been significant growth in and around Huntingdon. House building has been at the rate of 2,000 per year since 1991. Previous policies have sought to protect the historic character of Cambridge by dispersing housing to villages and towns beyond the Cambridge Green Belt. However efforts to limit employment growth within and close to Cambridge and to encourage spin-out to other centres have only partially succeeded. There is now some cluster development in the market towns. However, job growth has outstripped house building in the immediate vicinity of Cambridge and house price rises have been some of the highest in the Structure Plan area over the last 5 years. As a consequence, many of those employed in Cambridge live some distance away resulting in longer distance mainly car-borne commuting. The planning framework which nurtured the emergence of the sub region as the home of the ‘Cambridge Phenomenon’ is no longer sustainable.” (paras 9.4 to 9.6)
- 3.8 The situation in central Oxfordshire is not exactly the same – for example, there are substantial employment sites to the south of Oxford, such as Milton Park, which some market towns are well placed to serve. However, the similarities of circumstances are striking, as are the differences of policy solutions.
- 3.9 Due to the dispersed character of settlements and employment sites in both Central Oxfordshire and the Cambridge area, both sub regions suffer from exactly the same problem of unsustainable, mainly car borne commuting, leading to serious congestion and a declining quality of environment. But the Cambridgeshire local authorities have recognised the fact that previous planning policies were exacerbating the situation rather than solving it by creating a less sustainable pattern of development. Strategic policies now focus development on four major locations around the city (the northern fringe, adjoining the Addenbrookes site to the south, Cambridge airport to the east, and the West Cambridge University expansion area). Northstowe new settlement six miles north west of the city, and to a much lesser extent in the market towns. A mix of employment sites, suited to the needs of high-tech and other businesses, will be provided within these major development areas and elsewhere in the city. This includes business parks (with B1 permissions), science parks (with B1(b) permissions) and areas suitable for high value manufacturing (B1 and B2).
- 3.10 This is widely accepted as a positive step forward for sustainable development of the sub region, including protection of the character of both the city and the surrounding areas. The Structure Plan strategy for the sub region has been incorporated unchanged into the draft Regional Spatial Strategy, and was subsequently endorsed in the recently published EiP Panel Report.

- 3.11 Furthermore, the local authorities in Cambridgeshire have recognised the difficulties and crucial importance of delivering growth sustainably, and to a very high quality, by establishing and jointly funding a special purpose delivery vehicle, Cambridgeshire Horizons. Horizons has significantly increased the expertise and resources available locally to ensure the delivery of both strategic and local planning policies and supporting infrastructure.
- 3.12 The Vision for the Cambridge sub region included in the Structure Plan, is very much in tune with the aspirations for central Oxfordshire:
- “The Cambridge sub region will continue to develop as a centre of excellence and world leader in the fields of higher education and research, and it will foster dynamism, prosperity and further expansion of the knowledge-based economy spreading outwards from Cambridge, whilst protecting and enhancing the historic character and the setting of Cambridge as a compact city, the character and setting of the Market Towns and other settlements in the sub region, and the important environmental qualities of the surrounding area. Sustainable and spatially concentrated patterns of high quality, socially inclusive development will be focussed on Cambridge, in the form of new communities on the edge of the city and in one or more new settlements, and in the Market Towns, to provide a more sustainable balance between jobs and homes, whilst meeting the needs of the sub region, rather than pressures generated elsewhere. Integrated transport systems related closely to the development patterns in the sub region, including high quality public transport networks, will deliver more sustainable travel patterns. An attractive, ecologically rich and accessible countryside will be facilitated. Development will be delivered by means of a co-ordinated approach which maximises and integrates the different sources of investment”.
- 3.13 It is surprising, therefore, that with such strong similarities of current characteristics and visions for the future, the strategic development policies for the two sub regions are so different. Since the change in strategic planning policies in Greater Cambridge was based largely on a sustainable development argument, it would be reasonable to question whether the continued dispersal of development to market towns in Oxfordshire is a sustainable strategy for the Oxford sub region. In the light of arguments in the previous section regarding the high-tech cluster, it is also reasonable to question whether this dispersal policy is in the best interests of the Oxford, and wider regional and national, economy.

4: Is unrestricted B1 land required in Oxford in order to enable the medium and long term growth of the high-technology sector?

Introduction

- 4.1 To gain a more thorough understanding of the current and future provision for development of the high-tech cluster in the Oxford area, a detailed comparator analysis of the development of Cambridge, in terms of employment structure and growth patterns for the high-tech and support sectors, has been undertaken. This is then followed by a comparison of science and business park provision in and around the two cities in order to understand how high-tech and support services have been accommodated in terms of land and property supply.
- 4.2 Although Oxford and Cambridge have clear parallels in terms of their size and world class universities, the two cities do differ in their economic structure, which partly relates to their geographical location but also because of historical patterns of growth (e.g. the location of the Cowley car plant in Oxford) and different local planning regimes. Our comparator analysis of Oxfordshire and Cambridge takes place on two levels: On a city basis (districts of Oxford and Cambridge) and at functional urban area (FUA) level²¹. The former category will enable us to make direct comparisons for the immediate city areas, however of more interest may be the FUAs which are similar in size and will ensure that the full scope of the high-tech and support sectors is accounted for in this analysis. By using this specifically defined geography and presenting it in addition to standard national, regional and district level data from the Nomis Annual Business Inquiry, a more representative comparative analysis of growth can be performed on the two cities.

Defining the high-tech sector and high-tech cluster

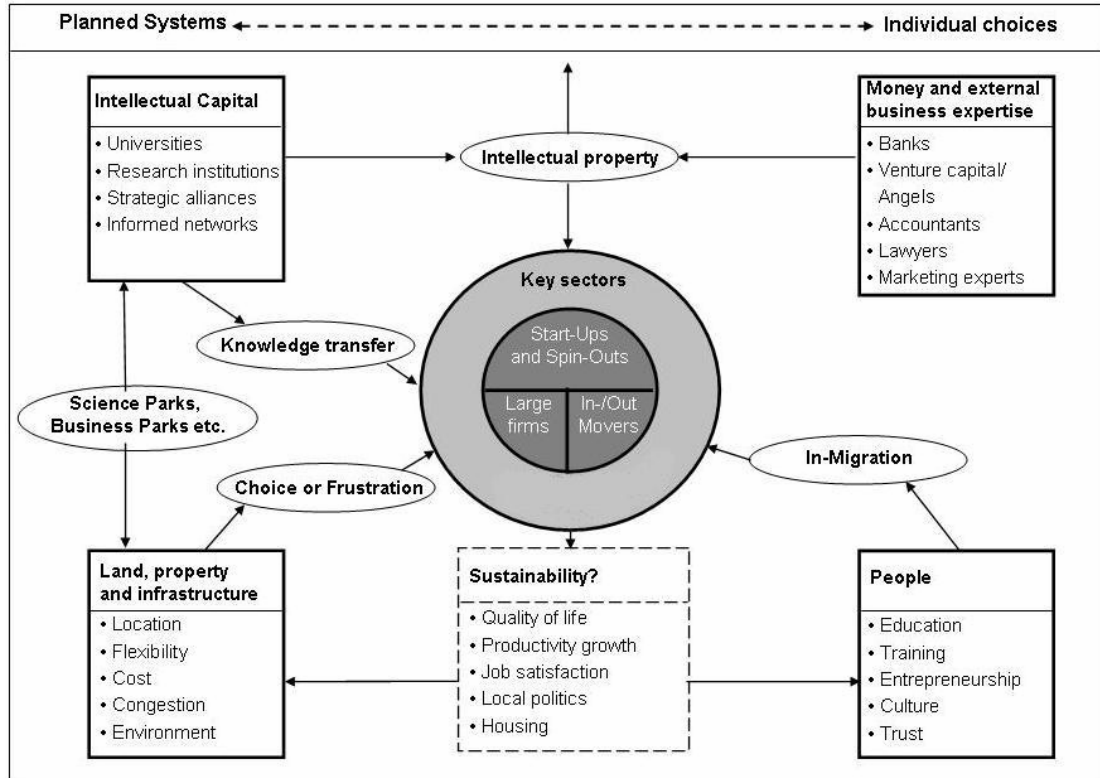
The high-tech cluster

- 4.3 Cambridge provides a good example of how sufficient provision of land for high-tech support services has enabled the expansion of the 'core' high-tech activity and the wider supporting services.
- 4.4 In the SQW 'Cambridge Phenomenon' study, the concept of the high-tech cluster is examined in detail. It was found that a number of business and financial support service companies provided a range of services specifically required by the 'core' high-tech businesses, for example venture capitalists, patent lawyers, and specialist advisers on business growth, thus forming a vital part of the cluster. Other elements, displayed in the cluster diagram in Figure 4-1, that have had a key role in the development and effective working of the high tech cluster, include skilled people, intellectual capital, and land and infrastructure. It is important

²¹ The Cambridge functional area has been based on the Greater Cambridge sub region area and is defined as the districts of Cambridge, South Cambridgeshire, East Cambridgeshire and Huntingdonshire. The Oxford FUA consists of the districts of Oxford, West Oxfordshire, South Oxfordshire, Cherwell and the Vale of White Horse.

to recognise the growth and comparative trends of both the high-tech 'core' sector and the supporting services, as part of the wider cluster, in the statistical comparison. Drawing comparisons across Oxford and Cambridge, in terms of the growth seen in the high-tech clusters, is useful in understanding what may be necessary for future development and associated property provision in Oxford.

Figure 4-1: The High-tech Cluster – a visualisation of the system



Source: Adapted from the 'Cambridge Phenomenon Revisited', SQW - © SQW Ltd 2000

The high-tech sector

4.5 Classifying the high-tech sector is complex. There are always difficulties in allocating industries into specific groups, particularly in the present day, where a firm may operate a range of activities under different branches of the same business. The definition of the high-tech sector we have used is based on the Butchart (1987) definition which was developed during the mid 1980s for the DTI. High-tech sectors, including both manufacturing and services, are identified which have an R&D intensity of at least 20% above the all-industry average, and an above average proportion of qualified scientists and engineers. It is preferred to the OECD (1997) definition, which uses three measures of R&D intensity based on R&D expenditure, because the latter excludes high-tech services. The main headings used to classify industry for the analysis are as follows but a more specific breakdown of categories using 1992 SIC codes²² can be found in Annex A.

²² Standard Industrial Classifications (SIC) have changed over time adding another discontinuity to the comparison. For the purpose of a consistent analysis, SIC 1992 codes have been used throughout

- The high-tech sector
 - high-tech manufacturing
 - high-tech services
- The supporting services
 - all support services
 - financial and business support services only

4.6 Annual Business Inquiry data (ABI) and Annual Employment Survey (AES) have been used as the basis for the analysis; however, these data sources have limitations which should be kept in mind when looking at trends in employment and workplaces. There are differences in the methods of data collection between the ABI (from 1998 onwards) and the earlier AES data (pre-1998) and therefore our analysis is presented as pre and post 1998 as these changes may affect the percentage employment growth rates.

4.7 To explore the growth patterns within the high-tech and supporting services, analysis has concentrated on employee numbers, but also looks briefly at workplaces²³, as a proportion of the total across all sectors. For example, the employee percentages displayed for the high-tech sector represent the proportion of all employees in that geographical area, who are employed in the high-tech sector.

The high-tech sector and supporting services pre 1998

High-tech sector pre 1998

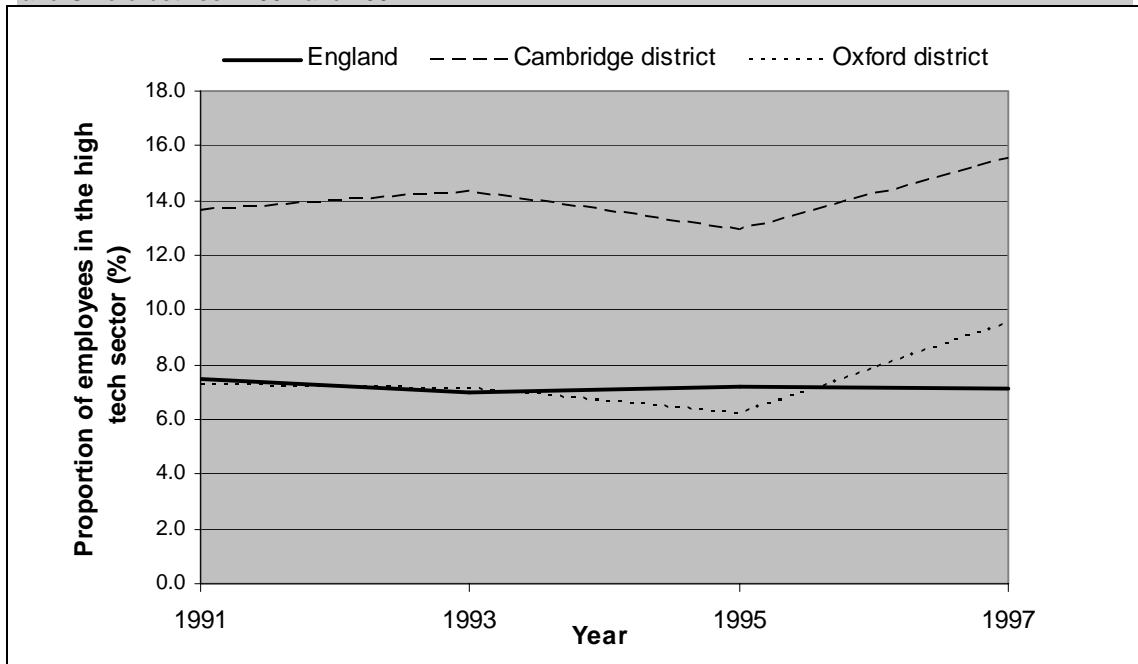
4.8 In Cambridge, the planning regime has been more favourable towards the growth of the high-tech sector for longer than in Oxford. The Greater Cambridge sub region has become globally recognised for its dynamic knowledge-based economy developed from a number of interlinking small and innovative technology-intensive firms. The majority of the high-tech activity that had established by the early 1970s, was still concentrated within the city centre itself rather than in the wider Greater Cambridge area. During the 1980s, there were a significant and growing number of high-tech firms based on the development or exploitation of research and development. By the beginning of the 1990s, high-tech activity had started to disperse and extend across Greater Cambridge enabled by the improved infrastructure and communications, for example, the completion of the M11, M25 and A14 dualling. A survey of high-tech firms by SQW²⁴ also noted the increased relative importance of areas further away from the city centre, compared with a similar survey 15 years earlier.

²³ For the purpose of this analysis the term 'workplaces' refers to the number of data units, however, it should be noted that they only provide an estimate of the number of workplaces because of the way the data are collected where two or more units can be present in the same workplace.

²⁴ SQW (2000) The Cambridge Phenomenon Revisited

- 4.9 Lawson-Smith et al (2003) suggests that with a more supportive County Council from the mid 1970s onwards, landmark high-tech companies began to establish in Oxford, predominately founded by Oxford University academics, and generally in the area of biotechnology and biomedicine. Since then, the high-tech economy has continued to grow with computer software and R&D related activities strengthened by increased foreign direct investment (FDI). FDI was important in the take-off phase of the sector in the 1980s with an estimated 10% of firms establishing from FDI, providing 30% of employment within the sector (Lawson-Smith, 1990). In Cambridge, the growing significance of the high-tech economy was increasingly reflected in economic development and planning policy and investments in and around the city. Cambridge University identified the commercial benefits of a science park, whilst others established property and business support initiatives to foster enterprise and innovation.
- 4.10 Although employment in the high-tech sector was growing in both cities in the early 1990s, the sector was much smaller in Oxford compared to Cambridge, particularly at city level where Oxford only began to see significant growth after 1995. By 1997 nearly 16% (or 12,300 FTE) of all employees in Cambridge City were working in the high sector compared to just under 10% (or 7,400 FTE) in Oxford and 7% across England.

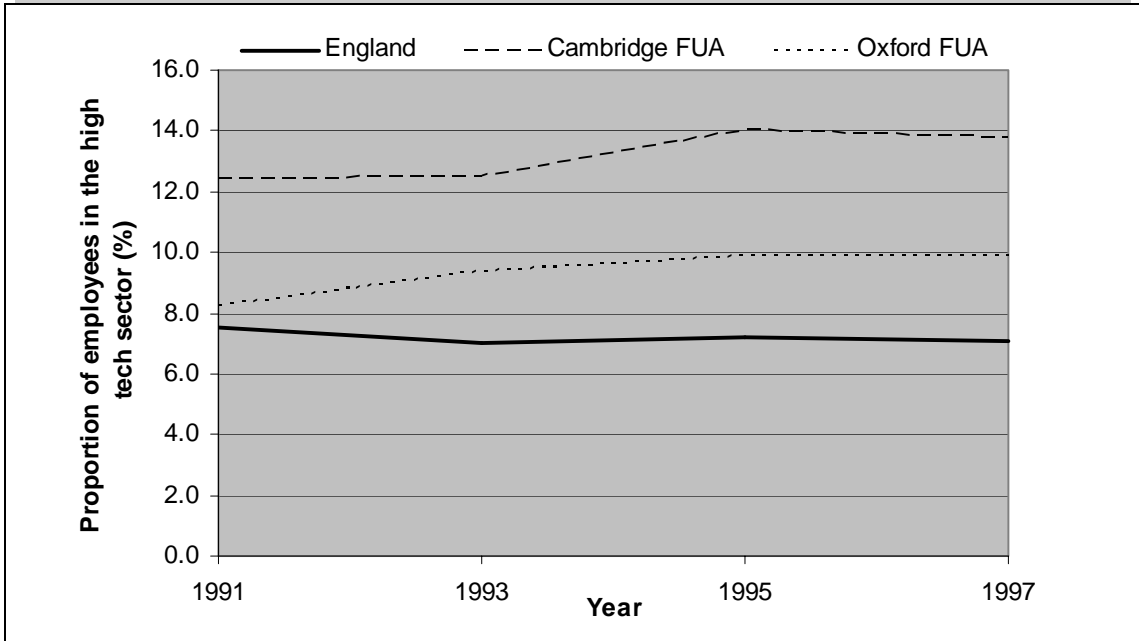
Figure 4-2: Proportion of all employees working in the high-tech sector across the districts of Cambridge and Oxford between 1991 and 1997



Source: Annual Employment Survey

- 4.11 At FUA level, the Greater Cambridge sub region was again ahead of Oxfordshire in terms of the proportion of employees working in the high-tech sector. Both FUAs were well above the national average during this period.

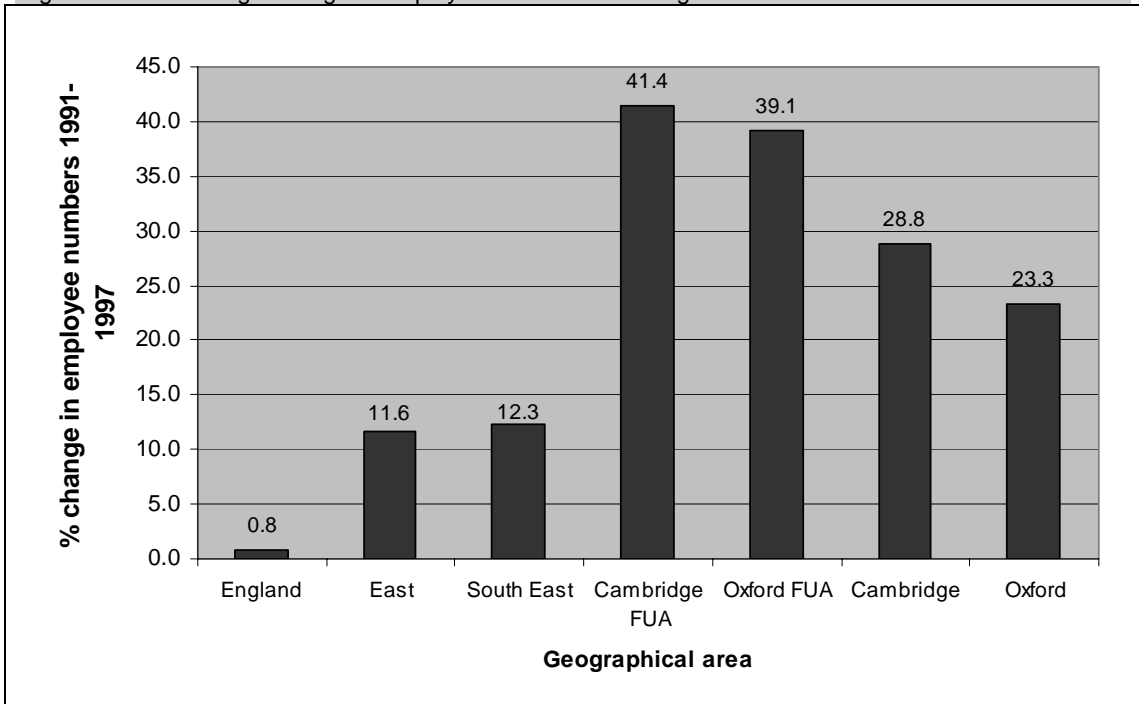
Figure 4-3: Proportion of all employees working in the high-tech sector across the FUAs of Cambridge and Oxford between 1991 and 1997



Source: Annual Employment Survey

- 4.12 Despite Cambridge consistently having a higher proportion of total employment dedicated to the high sector, both cities still showed marked increases in total employee numbers compared to the regional and national trends, shown in Figure 4-4 below.

Figure 4-4: Percentage change in employee numbers in the high-tech sector between 1991 and 1997

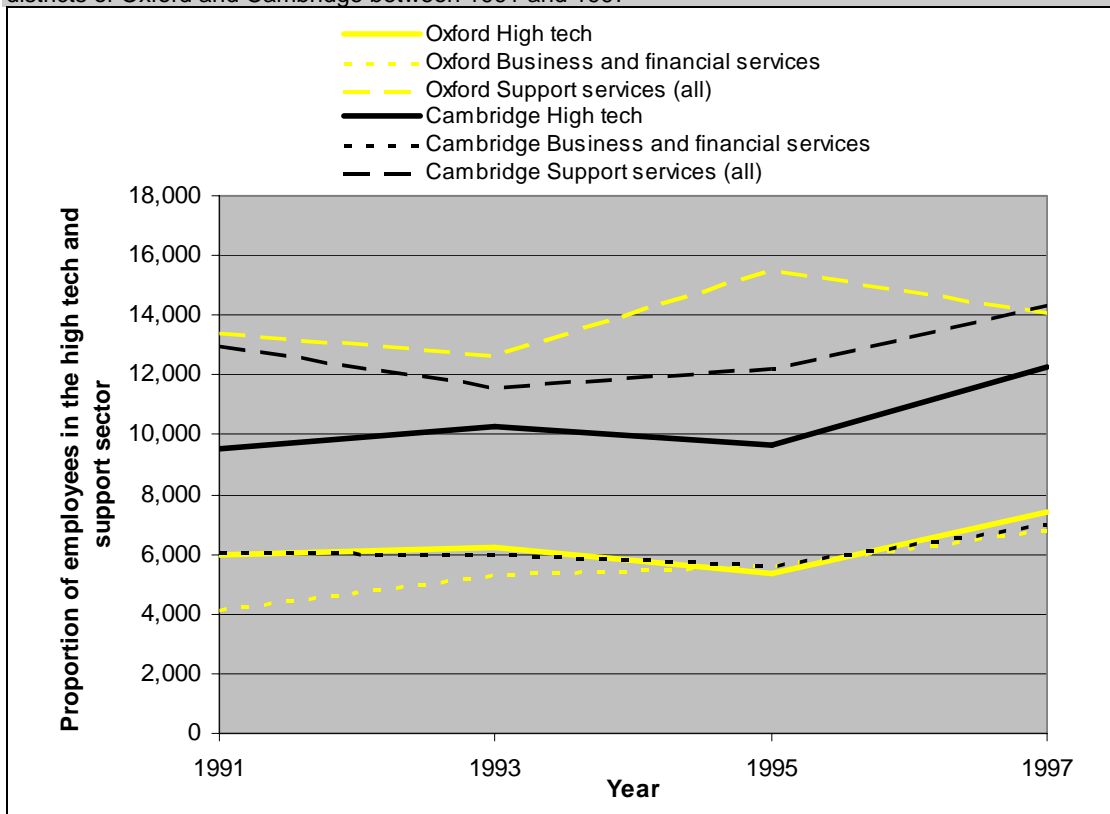


Source: Annual Employment Survey

Supporting services pre 1998

- 4.13 Business and finance services have had a vital role in the development of the high-tech clusters in both Oxford and Cambridge. In Cambridge, business expertise from patent lawyers, accountants and marketing experts, in addition to venture capitalist funds and specialist practices, for example in biotechnology, all provide the high-tech sector with the necessary specialist services. SQW²⁵ found a number of the business and financial support service companies provided a range of services tailored to the needs of the high-tech businesses therefore forming a vital part of the linkages and networking locally, regionally and at a national and international level.
- 4.14 In the early 1990s the City of Oxford was behind Cambridge in terms of the proportion of workplaces and employment dedicated to business and financial services. However, between 1991 and 1997, alongside increasing employment in the high-tech sector, the City of Oxford experienced a 65% increase in total employment in the business and financial services sector accompanied by a steady increase in the number of workplaces. By 1997 Oxford's employment in the supporting services had caught up with Cambridge reaching approximately 6,800 employees (compared to 7,000 in Cambridge) making up nearly 9% of the total workforce, 4% more than in 1991.

Figure 4-5: Proportion of employees working in the high-tech sector and support services sector in the districts of Oxford and Cambridge between 1991 and 1997



Source: ABI employee analysis

²⁵ SQW (2000) The Cambridge Phenomenon Revisited

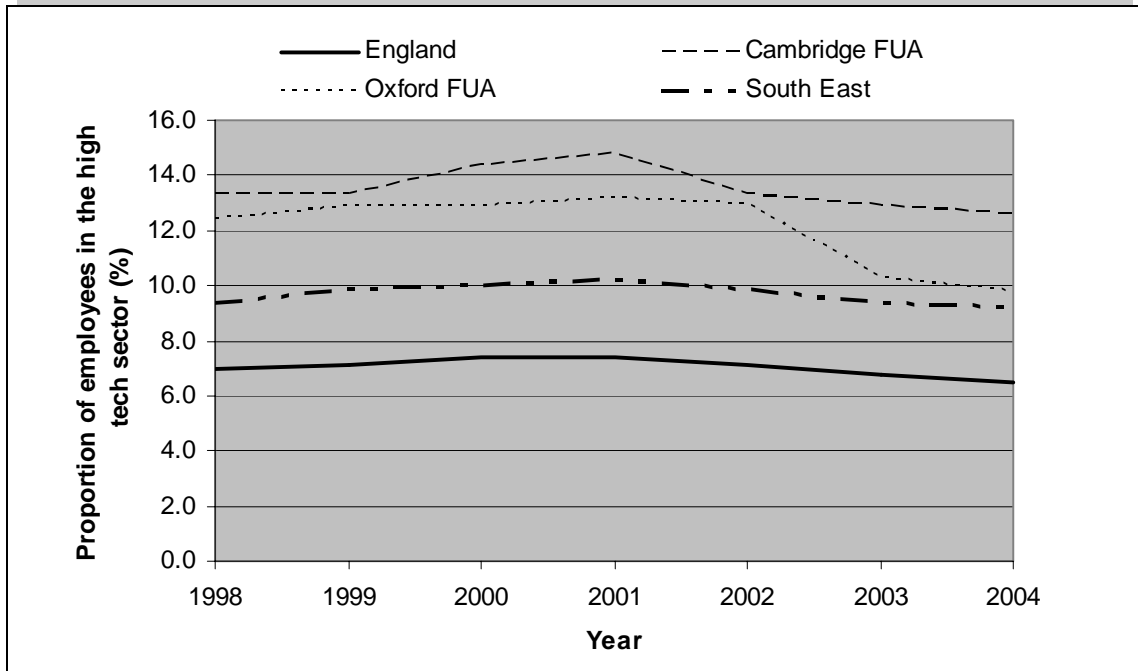
4.15 In addition to Oxford's growing business and financial services sector, Oxford's support sector as a whole (business and financial activities plus more general support services) had expanded and by 1997 over 45,600 people were employed in the sector (nearly 18% of all employment), compared to the 28,900 employees in Cambridge (nearly 14% of all employment). It should be noted that the rate of growth for employment and workplaces across both cities was less than the growth seen at a regional and national level.

The high-tech sector and supporting services post 1998

High-tech sector post 1998

4.16 Compared to pre 1998, the high-tech sector in Oxford post 1998 showed a considerably higher proportion of total employment working in the high-tech sector. In 2001, 13% of all employees in the FUA of Oxford were employed in the sector compared to 15% in Cambridge.

Figure 4-6: Proportion of employees working in the high-tech sector across the FUAs of Cambridge and Oxford between 1998 and 2004



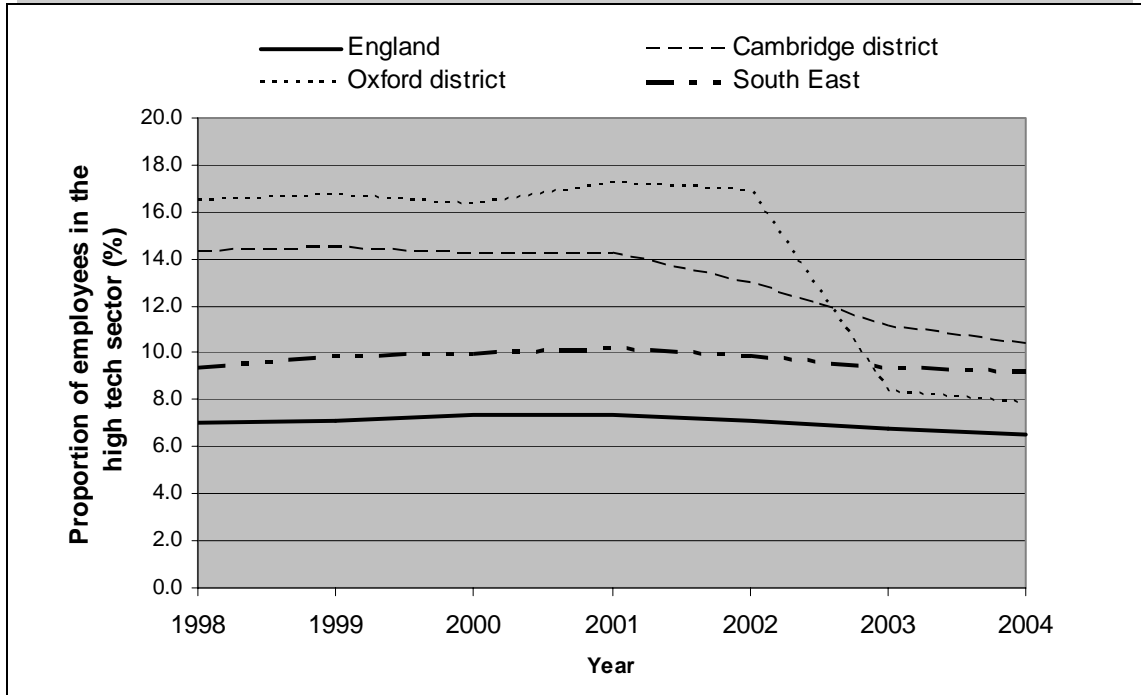
Source: ABI employee analysis

4.17 At city level, however, Oxford's rapid rate of growth in the late 1990s meant it eventually overtook the City of Cambridge in terms of the proportion of employees in the high-tech sector peaking in 2001 with over 17% of all employees working in the sector (compared to 14% in Cambridge and 7% across England).

4.18 Oxford's catch up in the late 1990s was because of an increasing importance of both the high-tech manufacturing and high-tech services sectors, particularly within the city itself. In 2004, the City of Oxford had nearly 4,080 people employed in the high-tech manufacturing sector (4% of all employment) compared to 1,360 in Cambridge (under 2% of all employment). Whereas Cambridge showed a much higher proportion of employees in the high-tech services sector prior to 1998, by 2001, the City of Oxford had overtaken with nearly 13% (11,600) of

all employees working in the sector, compared to 11% (9,400) in Cambridge and 5% across England.

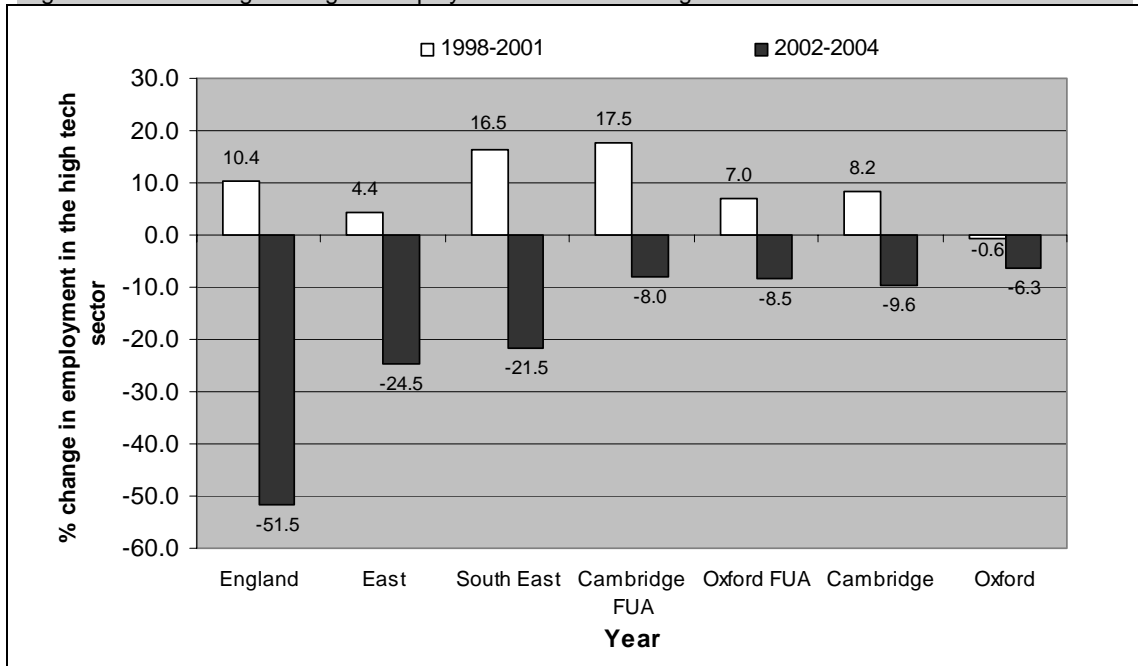
Figure 4-7: Proportion of employees working in the high-tech sector across the districts of Cambridge and Oxford between 1998 and 2004



Source: ABI employee analysis

- 4.19 As shown in Figure 4-7 above, there has been a decline in employment in the high-tech sector (as a proportion of total employment) in Cambridge in 2001, and after 2002, also in Oxford. This decline was especially marked in the City of Oxford, where absolute numbers of employees in high-tech sectors fell from nearly 16,000 in 2002 (17% of all employment) to 7,700 in 2004 (less than 8% of all employment).
- 4.20 Figure 4-8 below displays how in the earlier part of the period, there was still growth in employee numbers within the high-tech sector with the exception of the City of Oxford which had already started to see a decline. After 2001, a steep percentage decrease in employment was seen nationally, regionally, and in both Oxford and Cambridge.

Figure 4-8: Percentage change in employee numbers in the high-tech sector between 1998 and 2004



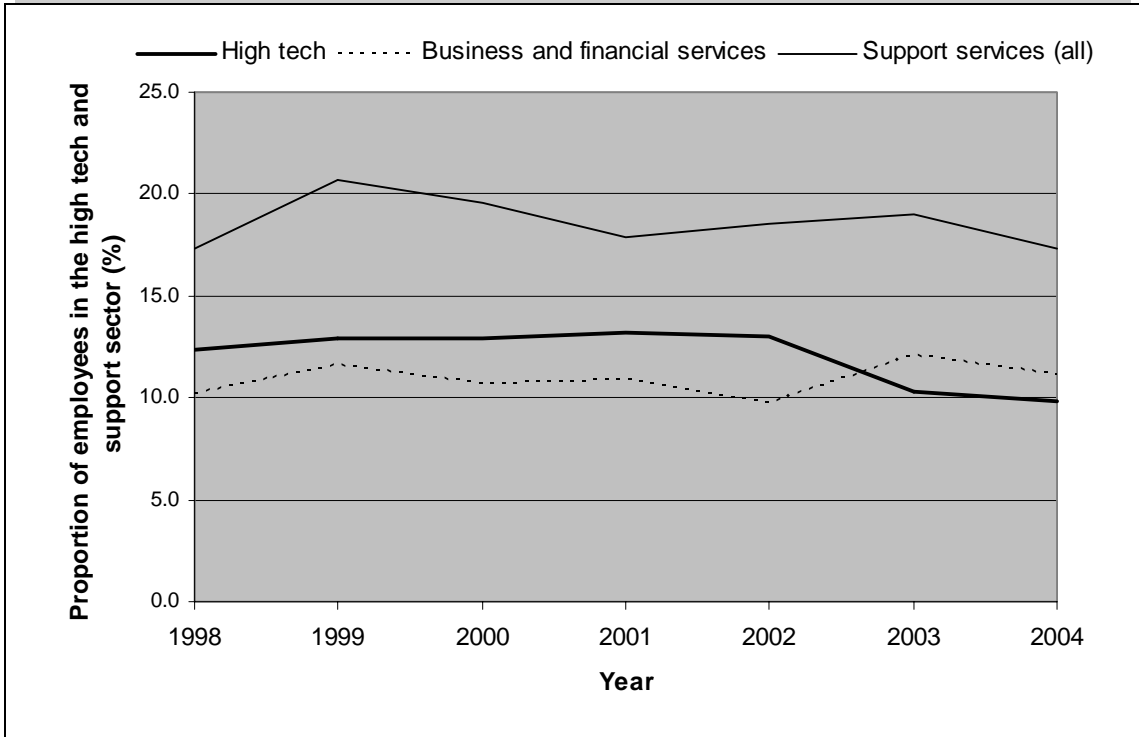
Source: ABI employee analysis

- 4.21 The decrease in employee numbers within both Oxford and Cambridge was primarily in the high-tech services sector rather than high-tech manufacturing. However, the reason behind such a dramatic fall within the City of Oxford is still unclear at present and needs further observation with the release of new data. Changes in the high-tech business environment are likely to have had a role to play in the decline, for example, the burst of the ‘dot-com bubble’ which marked a decline in high-tech employment in Western nations and this, combined with other events, led to a reduction in venture capital investment. However, the fact that the decline in employment within the high-tech sector has been more severe in the City of Oxford than the wider FUA suggests that firms may have been encouraged to grow outside rather than within the city by planning policies and related availability of business space.

Supporting services post 1998

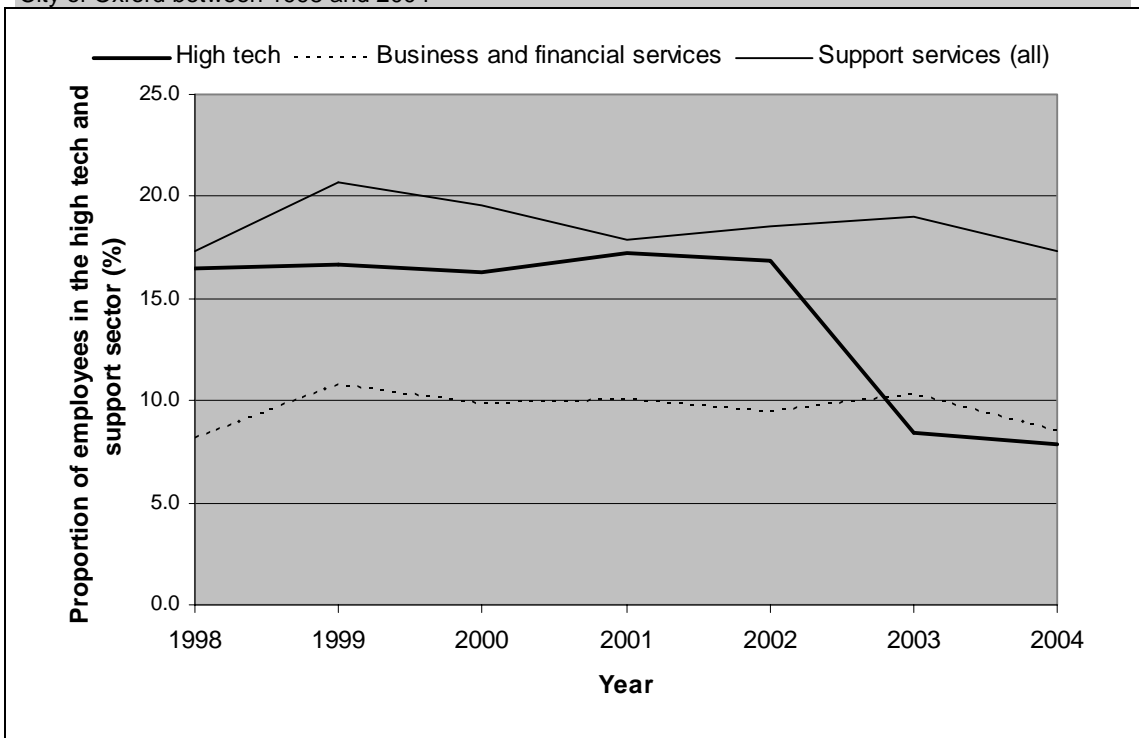
- 4.22 In both cities the rate of growth in employment within the support sectors seemed to closely follow the trends of the high-tech sector. Between 1998 and 2004, Oxford predominately had a larger business and financial services sector, when looking at employment, compared to Cambridge, particularly at FUA level. In Oxford the proportion of employees working within the sector fluctuated between 10% and 12% compared to 6% to 7% in Cambridge.
- 4.23 The sharp decline seen at city level in the high-tech sector in Oxford was not repeated in the support sector which instead has remained relatively steady over the period, apart from a slight fall after 2003. The number of employees working in the business and financial services sector in the City of Oxford still increased between 1998 and 2004, rising by 10%, compared to a fall of 17% in Cambridge. At FUA level, employment in this sector increased by 14% in Oxford compared to a fall of 6% in Cambridge. Therefore provision must still be made for the support sector, which in terms of employee numbers is still growing in Oxford.

Figure 4-9: Proportion of employees working in the high-tech sector and support services sector in the in the FUA of Oxford between 1998 and 2004



Source: ABI employee analysis

Figure 4-10: Proportion of employees working in the high-tech sector and support services sector in the City of Oxford between 1998 and 2004



Source: ABI employee analysis

Employment land and business park provision in Oxford

- 4.24 Nathaniel Lichfield and Partners consider the issue of business park provision, and business accommodation more generally, in their “Oxford Employment Land Study”²⁶. They identify limited supply of employment land as one of a number of threats and weaknesses in the Oxford economy. The study also compares Oxford with Cambridge, the Thames Valley, Milton Keynes and Swindon as a business location. It concludes that Oxford is “less able to compete with surrounding areas to attract manufacturing, distribution, HQ and general offices” as these competing locations have lower costs and fewer land and labour constraints. Oxford currently retains significant advantages as a location for biosciences, however as the cluster diagram (Figure 4-1) illustrates, the growth of high-tech activity services requires appropriate support functions and therefore provision of general office space. The report acknowledges Oxford’s world-leading role in key knowledge based sectors but warns of the need to “guard against complacency and take steps to ensure it remains competitive in the long term.”²⁷
- 4.25 The same study identified a “reasonable” supply of modern office and R&D space but in very few locations, with limited choice and high costs. As a result, Nathaniel Lichfield and Partners consider how future economic growth in Oxford could be accommodated. They recommend that future allocations should focus on the ring road with access to the A34. The report identifies new employment allocation at the Peartree reserve site, alongside some additional provision for R&D and science-related activities in the West End, as the two “best-performing” options. The report states that “this would help maintain diversity of activities and employment and an approach of modest expansion of employment land would appear more in line with the managed growth aim of the City Council.”
- 4.26 The main business and science park locations in the Oxford area are listed in Table 4-1. This table includes only business park accommodation rather than single-ownership buildings or manufacturing plants (e.g. BMW). It also excludes ‘single-building’ business centres and industrial estates.

Table 4-1: Business Park provision in the Oxford area

Name of Park	Size (Floorspace in sq m)	Planning consent/type of space
Oxford Business Park	77,000 sq m	B1 office
Oxford Science Park	40,500 (rising to 65,00 sq m)	R&D office and laboratory
County Trading Estate	14,100 sq m	Mixed - light industrial, office
Milton Park, Abingdon	330,000 sq m	Multiuse – variety of sectors and activities
Abingdon Business Park	35,000 sq m	Mixed – office and warehousing
Abingdon Science Park	N/A	R&D office and laboratory
Begbroke Science and Business Park	22,000 sq m (of which 6,000 sq m has been built)	Office and laboratory space
Oxford Industrial Park, Kidlington	11,500 sq m	Mixed office and light industrial

²⁶ Oxford Employment Land Study 2006 - Nathaniel Lichfield and Partners

²⁷ Oxford Employment Land Study 2006 - Nathaniel Lichfield and Partners p95

Name of Park	Size (Floorspace in sq m)	Planning consent/type of space
Oxonian Park, Kidlington	11,800 sq m	Industrial and warehousing
Harwell Science and Innovation Campus, nr Didcot	240,000 sq m	R&D and laboratory

Source: Floorspace data from Oxford Employment Land Study 2006 (Annex) - Nathaniel Lichfield and Partners

Employment land and business park provision in Cambridge

- 4.27 Cambridge has provided a mix of general purpose business parks and science and research park accommodation over the last 35 years. Generally, the growth of dedicated R&D and high-technology business space has been mirrored by the development of general business space. As Cambridge Science Park grew in the 1980s so general business parks were developed at Vision Park to the north of the city and the Cambridge Business Park, close to the Science Park site. The 1990's saw further development of the Cambridge Science Park as well as additional B1b space at Granta Park to the south of the city and research-related space at High Cross Research Park (now part of the West Cambridge Master Plan area). At the same time further B1 office space was developed at an extended Cambridge Business Park and more recently at Swavesey and the new village of Cambourne. This pattern of 'balanced growth', enabling the expansion of the high-tech sector and general B1 office space, has been a characteristic of Cambridge and its hinterland in recent years. It has enabled a critical mass of R&D and high-technology businesses to form on dedicated sites whilst encouraging the growth of general business activity, which may support the high-tech sector or result from broader economic growth, elsewhere.
- 4.28 More recently, further general business park accommodation has been developed in the new village of Cambourne. This site has open B1 consent though the concept of a Research Quarter has been developed. The development of R&D, and more specifically laboratory, space will depend on market demand. If demand for laboratory space is not forthcoming it is likely that general office space will be built.

Table 4-2: Business Park provision in the Cambridge area

Start date	Name of Park	Size (Floorspace in sq m)	Planning consent
1970 Extension: 1999	Cambridge Science Park	145,540 sq m	Site pre-dates use class order but entry policy restricts to scientific research and development plus some ancillary services
1987	Vision Park	12,000 sq m	B1
1989 Extension 1998	Cambridge Business Park	29,357 sq m	B1
1990	Melbourn Science Park	60,960 sq m	B1
Late 1990's	Peterhouse Technology Park	15,000 sq m	B1b (R&D)
1998	Granta Park	55,000 sq m	B1b (R&D and High-tech), with a particular focus on life sciences in practice

Start date	Name of Park	Size (Floorspace in sq m)	Planning consent
Master plan 1999 Commercial space developed from 1986 (High Cross Research Park is part of this site)	West Cambridge	40,877 sq m of commercial research space in Master Plan of which 8,100 sq m developed to date	Consent restricted B1b R&D and high-tech uses.
1999	Cambourne Business Park	69,677 sq m 50% developed to date. Next phase to include a 29,728 sq m Research Quarter	B1 – Business Use
1999	Cambridge Research Park	Outline permission for 55,741 sq m. 19,695 sq m developed to date.	B1a and B1b

Source: SQW Ltd

Comparing Business Park provision in Oxford and Cambridge

- 4.29 Comparisons between Oxford and Cambridge (see Table 4-1 and Table 4-2) are interesting. Firstly, Business Park provision in Oxford is dominated by two major parks to the south of the city which account for over 70% of provision listed in Table 4-1. Milton Park (12 miles south of Oxford) is far larger than any business park development in Cambridge; it is twice the size of Cambridge Science Park. This development accounts for over 40% of the listed provision in the Oxford area whilst the Harwell site accounts for a further 30%. Oxford's property portfolio is dominated by these two sites to the south of the city plus the development of the Science and Business Parks within the city (also to the south of the city centre), and some smaller business parks elsewhere. In contrast, Cambridge has developed a more diverse portfolio of medium sized parks in and around the city. Both cities have a similar amount of general business park space in the immediate environs of the city, though Cambridge Science Park provides significantly more dedicated R&D space than is available at the equivalent Science Park in Oxford.
- 4.30 Geographically speaking, business park provision in Cambridge is more evenly distributed with Cambridge Research Park and Vision Park to the north (17% of provision listed in Table 4-2), Granta Park to the south (13%), Cambourne to the West (17%) and both R&D and general business space in the city itself (52%). This contrasts with Oxford where 17% of business park space is located in the city, 4% to the north (Kidlington and Begbroke) and 79% to the south (Abingdon and Didcot). The strong spatial concentration to the south of Oxford is further reinforced by the location of Oxford Business and Science Parks which are both located to the south of the city centre.

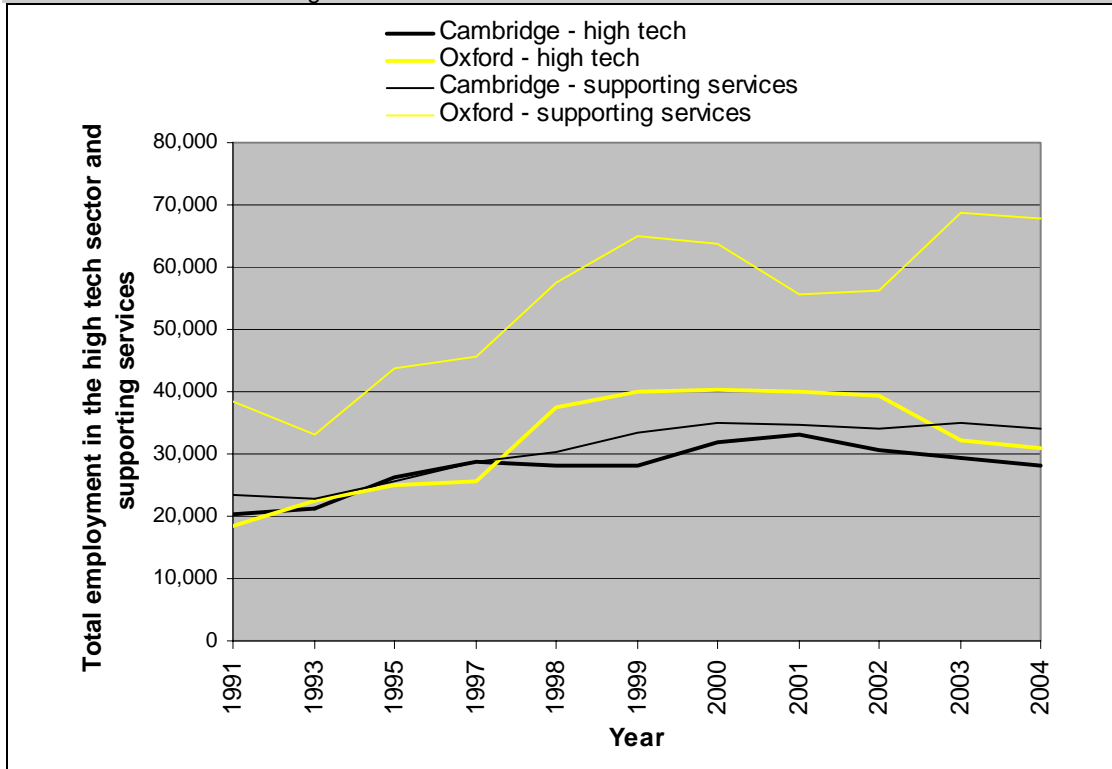
Summary and implications

- 4.31 We believe that the evidence presented in this chapter supports the view that land for business park use (i.e. with an unrestricted B1 planning consent) is required in order to enable the medium and long term growth of the high-technology cluster in Oxford.

- 4.32 Data from 1991 to 2004 provides some indication of the historical nature of growth in the high-tech cluster in Cambridge and Oxford²⁸. Although not clearly illustrated in Figure 4 -11, our research shows that Cambridge's high-tech sector is the older, and prior to 1998, was marginally larger than the Oxford equivalent. Rapid expansion of the high-tech sector in Oxford in the late 1990s, both in absolute terms and as a proportion of employment, meant that the high-tech sector grew larger than in Cambridge. However, the recent downturn in high-tech employment at national level appears to have hit Oxford harder than Cambridge, thus narrowing the gap in absolute employment terms.
- 4.33 When viewed at district level, the high-tech sector in the City of Oxford was even harder hit than Oxford FUA or Cambridge. The reasons for such a marked fall in Oxford's high-tech employment are not clear, especially when compared to Cambridge's decline which was much more gradual. It is possible that the weaknesses of limited land supply, high costs and a constrained labour market identified in the recent Employment Land Study may have exacerbated the downturn at a local level. At least a lack of new property becoming available in the city, thus increasing costs cannot help the attraction and retention of high tech business activity.
- 4.34 SQW's 'Cambridge Phenomenon' highlights that the high-tech sector requires a range of supporting services if the potential of the sector is to be maximised. Data suggests that both Oxford and Cambridge have been successful in enabling the growth of both high-tech and supporting services over the last 10-15 years. Looking more closely at patterns of growth in the two cities, growth in supporting services in Cambridge has tended to mirror that of the high-tech sector. Employment in supporting services in Oxford is much larger than in Cambridge and has also tended to reflect growth in the high-tech sector, with the exception of the last two years where the supporting services have exhibited net growth in contrast to a decline in the high-tech sector.
- 4.35 Given the importance of supporting services to the development of the high-tech sector and, in Oxford, the increasing significance to the economy in terms of the proportion of total employment, it is essential that sufficient land is secured to support this growth and enable the expansion of the 'core' high-tech activity of the cluster.

²⁸ Trends for the entire 1991 to 2004 period must only be treated as indicative due to inconsistencies in the data collected after 1998.

Figure 4 -11: Total employment in the high-tech sector and supporting services between 1991 and 2004 across the FUAs of Cambridge and Oxford



Source: ABI employee analysis

- 4.36 The common challenges of a supporting growth of the high-tech sector in the context of a constrained city environment make the comparison between Oxford and Cambridge interesting in terms of business park provision. Despite facing similar issues, the range of provision varies markedly. Oxford is dominated by two major parks to the south of the city which account for over 70% of provision, and even the two main 'city' parks (Oxford Business and Science Parks) are to the south of the centre. In contrast, Cambridge offers a range of medium sized Parks in the city and to the north, south and west. Both cities currently offer a mix of dedicated R&D space and general B1 accommodation; however planning policies in Oxford have tended to encourage provision of B1 space away from the city. This analysis suggests that the Oxford economy could benefit from a more balanced portfolio of business parks in terms of size, type and location.
- 4.37 In conclusion, the importance of support functions to the growth of the high-tech sector, likely future demand for increased space from a growing supporting services sector, the concentration of current provision to the south of Oxford, and increasing pressure on an already constrained city centre, all make a compelling case for additional B1 space to the north of the city centre.

5: How can Oxford ensure balanced economic development that meets the needs of all its citizens?

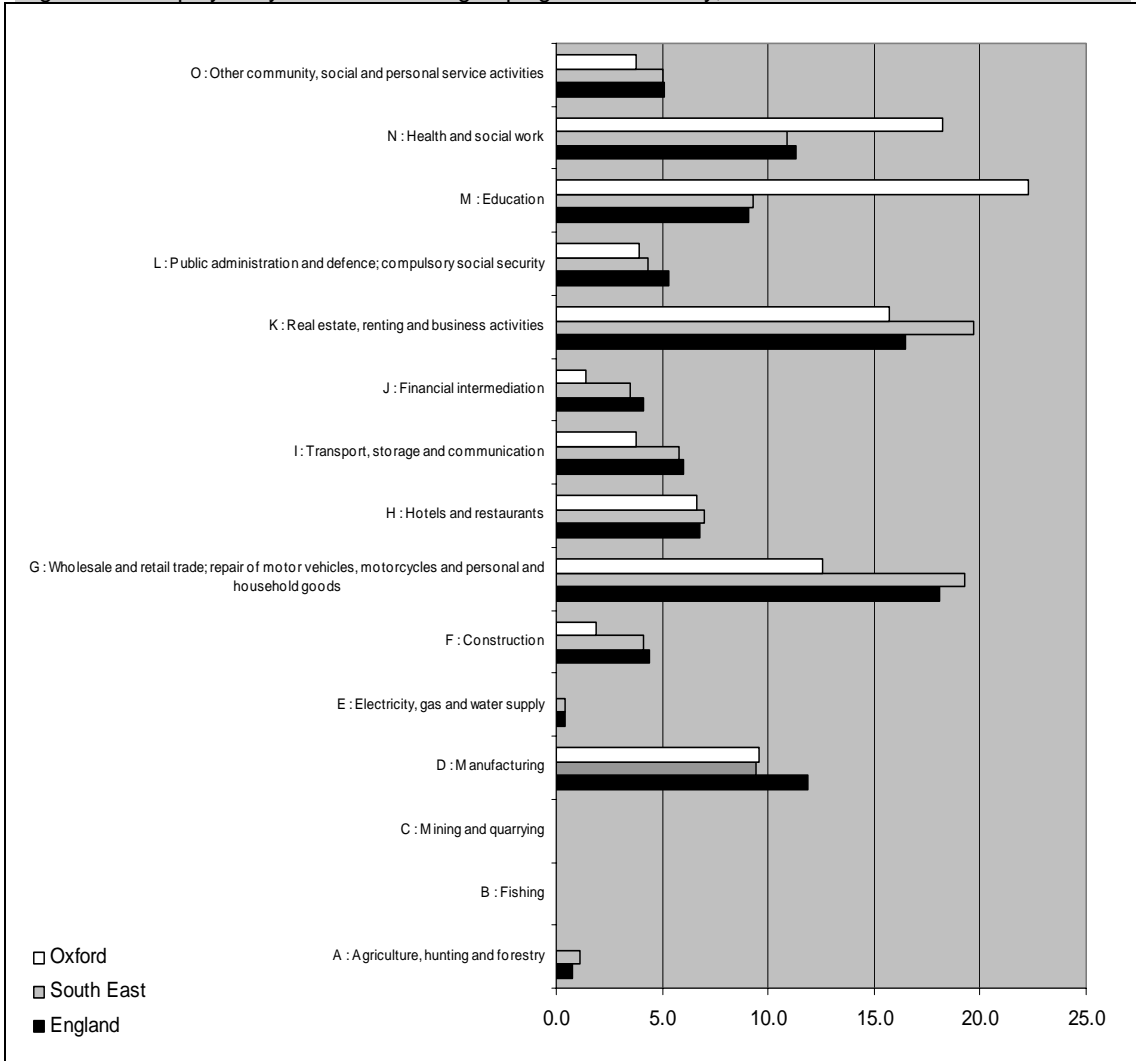
- 5.1 Oxford needs a balanced approach to economic development which meets the needs of all its citizens – current and future. The needs of the local economy cannot be met by the high-technology sector alone, and therefore sufficient provision must be made for general business development which provides the range of employment needed to meet the needs of all Oxford’s citizens. On that basis, the scale and location of general business park provision must be considered.

The economy of Oxford and the need for balanced growth

Employment structure

- 5.2 Oxford and its surroundings have a strong economy which contributes significantly to the South East and UK economies. In terms of industrial sectors, the influence of the two Universities and the Oxford Radcliffe Hospitals can clearly be seen in the employment profile of the city: the proportion of employees in education (22%) and health and social work (18%) are both significantly higher than regional and national averages. ‘Real estate, renting and business activities’ is the next largest sector, albeit below the regional and national averages in terms of proportion of employment (see Figure 5-1). Compared to national and regional trends, the city has a small proportion of its employees in financial intermediation, transport and storage, and construction related industries. The nature of SIC data is such that high-tech and knowledge-based industries can often be subsumed into broader categories. As a result, Oxford’s specific strength in bioscience, software and other high-tech activities are not emphasised.

Figure 5-1: Employee by broad industrial groupings in Oxford City, 2004



Source: ABI employee analysis

5.3 Given the dominance of education and healthcare professions, it is equally valuable to study employment by occupational grouping. Table 5-1 illustrates that whilst high-technology and knowledge-based industries are important to the economy, 20% of the workforce is engaged in low skills jobs (SOC 2000 groups 8-9). This is significantly higher than the South East (15.6%) and GB (18.9%) averages. The city also has a higher than average proportion of administrative employees (16.7%) which is likely to be associated with large employers within the health and education sector. It is also interesting to note that whilst the city can boast a high proportion of people working in professional occupations (21.6%) there is a significantly less managers and senior officials within the workforce (9.7%) compared with the South East (17%) and GB (14.9%).

Table 5-1: Employment by Occupational Grouping, 2005

	Oxford (numbers)	Oxford (%)	South East (%)	GB (%)
Soc 2000 major group 1-3	30,100	44.2	45.7	41.6
1 Managers and senior officials	6,600	9.7	17	14.9
2 Professional occupations	14,700	21.6	13.8	12.5
3 Associate professional & technical	8,800	12.8	15	14.2
Soc 2000 major group 4-5	16,300	23.9	23.4	23.6
4 Administrative & secretarial	11,400	16.7	13	12.6
5 Skilled trades occupations	5,000	7.3	10.4	11
Soc 2000 major group 6-7	10,300	15.1	15.1	15.6
6 Personal service occupations	5,200	7.6	8	7.8
7 Sales and customer service occupations	5,100	7.5	7.1	7.7
Soc 2000 major group 8-9	13,700	20	15.6	18.9
8 Process plant & machine operatives	2,400	3.5	5.4	7.5
9 Elementary occupations	11,300	16.6	10.2	11.4

Source: Nomis, Annual population survey

Skills

- 5.4 Oxford has a highly skilled labour force with 35% of the working age population qualified to NVQ 4 and above, compared to 29.5% in the South East and 26.5% nationally. The performance at NVQ4 and above is undoubtedly influenced by the two Universities and the associated research functions, however the proportion of the workforce that is not qualified to NVQ1 or above in Oxford (21.9%) is also higher than the regional (17.7%) average. This is indicative of relatively high levels of the workforce with unspecified ‘other’ qualifications and people with no qualifications. As Table 5-2 shows, 10.9% of the workforce has no qualifications, a figure that is lower than the GB average but again higher the average for the South East (10.1%).
- 5.5 At county level, there appear to be significant skills shortages. The National Employers Survey 2005 found that 29% of employers in Oxfordshire had current vacancies, compared to 20% across Milton Keynes, Oxfordshire and Buckinghamshire (MKOB²⁹). Similarly, 28% of employers in Oxfordshire reported skills gaps, 7 percentage points higher than in 2003 and for the MKOB area³⁰. 13% of employers in Oxfordshire reported ‘hard to fill’ vacancies compared to 10% across the MKOB area.

²⁹ Milton Keynes, Oxfordshire and Buckinghamshire (MKOB) is the operating area for the Learning and Skills Council.

³⁰ Oxfordshire Skills and Economic Assessment – LSC (May 2006).

- 5.6 The data relating to skills suggests there is a polarisation of the labour force, with high proportions of highly qualified people and those with no qualifications. This underlines the need for balanced economic development which builds upon the strengths of the highly qualified population but provides appropriate employment and training opportunities for those with no or limited qualifications. Upskilling of those with no or low level qualifications workforce in the medium term may also help to ease the skills shortages evident in the Oxfordshire economy.

Table 5-2: Level of qualification, 2005

	Oxford (numbers)	Oxford (%)	South East (%)	GB (%)
NVQ4 and above	31,500	35	29.5	26.5
NVQ3 and above	53,200	58.4	48.5	44.4
NVQ2 and above	63,000	69.1	67.3	62.9
NVQ1 and above	71,200	78.1	82.3	77.2
Other Qualifications	9,100	10.1	7.4	8.4
No Qualifications	9,800	10.9	10.1	14.3

Source: Nomis, Annual population survey

Average earnings

- 5.7 Table 5-3 shows that whilst the City of Oxford has the highest average earnings by workplace in the county, it has the lowest earnings by residence. This is indicative of the relatively high proportion of economically inactive people in the city (24.9% compared to 17.8% in the South East and 21.6% in nationally³¹) which is likely to be the result of the large student population. It may also be that a proportion of the workforce on higher earnings is living outside the city centre.
- 5.8 When ranking the average gross weekly earnings of full-time workers based on the area of workplace in the South East, Oxford City is positioned 24th out of the 67 districts (2005; Annual Survey of Hours and Earnings). Given the highly qualified workforce (the proportion people with NVQ4 and above qualifications stands at 35% compared to 29.5% for the region) one might expect Oxford to be ranked higher. However, the influence of the University, where a large number of highly qualified employees may be working for a relatively low salary, may again be evident.

³¹ Annual Population Survey (Jan 05- Dec 05)

Table 5-3: Average earnings by workplace and residence in Oxfordshire

Area	Average earnings by workplace £	Average earnings by residence £
England	526.1	527.7
South East	539.0	577.0
Oxfordshire	523.7	563.7
Cherwell	477.6	518.8
Oxford City	560.1	495.2
South Oxfordshire	509.1	687.2
Vale of White Horse	542.1	575.0
West Oxfordshire	486.4	550.0

Source: ONS, Annual Survey of Hours and Earnings

Pockets of poor economic performance and deprivation

- 5.9 Despite the overall economic strength of the Oxford economy as outlined in Chapter Two, data from the Index of Multiple Deprivation (IMD) 2004 indicate that of the 85 Super Output Areas (SOAs) within the City of Oxford 10 (12%) are in the bottom 20% of most deprived SOAs nationally. Oxford City Council³² cite research carried out by The University of Oxford in 1999, and more recent small area data from City Council surveys and Neighbourhood Statistics as evidence of specific pockets of deprivation in the city. In terms of benefit claimants, high concentrations are evident in the south and south east of the city (in particular Blackbird Leys, Littlemore and Rose Hill) and high concentrations of income support benefit units in Blackbird Leys, and in St Clements and East wards towards the city centre. The City Council estimate that one in six people in the city live in a household claiming low income benefits.

The needs of high-technology businesses

- 5.10 Whilst the research strengths of Oxford University make the city a hub for the high-tech sector both regionally and nationally, it is interesting to note the majority of high-tech companies in Oxfordshire are actually located in the surrounding districts (see Table 5-4)

³² <http://www.oxford.gov.uk/community/fighting-poverty.cfm>

Table 5-4: Distribution of High-tech companies in Oxfordshire, end 2001

District	No. of High-tech Companies	As % of total
Cherwell	265	19.5
Oxford City	242	17.8
South Oxfordshire	282	20.7
Vale of White Horse	331	24.3
West Oxfordshire	240	17.6
District unknown	57	-
Total: Oxfordshire	1,417	100

Source: Enterprising Oxford – OEO, 2003

- 5.11 This distribution may result from a lack of appropriate sites and business accommodation and/or prohibitive costs within the city. It also shows that immediate proximity to the University is not essential to all high-tech businesses. However, given the limited availability of sites in central Oxford and the large number of high-tech businesses in the county it reinforces the need to protect prime sites for high-tech businesses for which proximity to the city’s research base is essential. In turn, this would support the case for general business use provision on the periphery of the city (provided it is accessible by public and private transport) in order to facilitate the movement of general office uses out of the central area, thereby freeing up space for high-tech businesses which need to be located close to the University.
- 5.12 The requirement for balanced economic development is also essential for the growth of the high-tech sector. As exemplified in Cambridge, high-tech businesses require support infrastructure and services to enable further business growth. Without sufficient provision for financial and other professional services and back office support, scope for expansion of existing high-tech companies and the likelihood of attracting inwards investors will be limited. Allied to this, a failure to provide a balanced economy which meets the aspirations of those employed by high-tech businesses will reinforce recruitment problems. Therefore economic growth must allow for sufficient provision for leisure and retail activities. Given the need for this holistic approach to economic growth, careful consideration needs to be given regarding the provision and location of employment sites.

Summary

- 5.13 The importance of the city’s research base and the emergence of high-tech and knowledge-based industries are huge strengths which should be fully exploited. However, the data shows that Oxford requires balanced economic development if it is to meet the needs of all its citizens. On this basis there would appear to be a strong case for greater provision of land for general business use within the city. Supporting evidence for this is summarised below.
- The high-tech and research-led activities are a vital part of the economy but should be seen as part of a broader economic picture. Even with Oxford’s relatively high

proportion of employees within high-tech sector it is important to remember that 92% of the workforce is employed in non-high-tech businesses.

- The requirement for balanced economic development is essential for the growth of the high-tech sector. High-tech businesses do not operate in isolation; they require a support infrastructure and services to enable further business growth.
- Whilst the workforce appears highly qualified, the types of employment are indicative of a mixed economy with a significant proportion of lower value and administrative jobs. Future employment provision must therefore account for this range of skill levels balanced with training opportunities to upskill the existing workforce.
- The city has pockets of deprivation, for example the Blackbird Leys and Littlemore areas of the city, where it is evident that some sections of the population are not enjoying the benefits of what is a strong local economy. Economic growth should provide flexible employment opportunities for those in deprived areas to ensure economic opportunities for all in the medium to long term. This is in keeping with the Oxford Economic Development Strategy which looks to support a key theme of the Oxford Community Strategy of “a vibrant and inclusive economy³³”. Employment sites need to be accessible by public transport whilst acknowledging that not all of these sites can be city centre locations. This is a particular advantage of the Peartree site which has excellent access to existing Park & Ride facilities.
- Data from the National Employer Survey (2005) indicates higher than average employment vacancies and skills gaps suggesting a constrained labour market. This suggests that businesses will therefore need to attract employees in from outside the city which will further increase traffic congestion. This strengthens the case for a peripheral site which is accessible from both from the city and surrounding districts.
- Across the city unemployment rates are relatively low but rates of economic inactivity are relatively high. Data for January 2005 – December 2005 shows that there are 22,700 economically inactive people of which nearly a quarter want a job. This suggests that there is some flexibility within the labour market but may point to a lack of accessible jobs at an appropriate skill level within or close to the city.
- The spread of high-tech firms across the county may be indicative of the limited amount and high cost of business space in the city, which could hamper the growth of high-tech industries within Oxford in the medium to long term. This is supported by the findings in report by Nathaniel Lichfield and Partners “there is a very limited supply of employment land remaining in Oxford to meet long term needs³⁴”. Provision on peripheral sites for those companies not requiring a central location may ease development pressures and traffic congestion in the city centre.

³³ Oxford Economic Development Strategy 2005-2020

³⁴ Oxford Employment Land Study - Nathaniel Lichfield and Partners, 2006

6: Conclusions

6.1 Overall, we feel that there is a strong economic case for the development of land at the Peartree site on the northern edge of Oxford. We believe that the evidence presented in this report supports the view that:

- Land with an unrestricted B1 planning consent is required in order to enable the medium and long term growth of the high-technology cluster in Oxford
- Oxfordshire would benefit from a focused rather than dispersed approach to economic development
- Oxford requires balanced economic development that meets the needs of all its citizens

6.2 This chapter summarises the key characteristics of the Oxford economy that have led us to these conclusions supported by evidence from Cambridge which has faced similar challenges in terms of the growth of the high-tech sector and the wider economy and provision of employment land.

Oxford is a unique asset to the South East and the UK

6.3 The academic excellence and research strengths of the University of Oxford and its historic city centre have made Oxford a prime tourist destination and created a ‘global brand’. The value of this brand should not be underestimated – if the economic opportunities it presents are not taken they cannot be replicated elsewhere.

6.4 In economic terms, Oxford and its hinterland has transformed itself from a heavy dependence on traditional industries to a knowledge-based economy which is considered to be one of Europe’s leading high-tech centres. This has been achieved by building upon the academic base at the University of Oxford and other research assets such as the Oxford Radcliffe Teaching Hospital, research centres at Harwell and Culham and Oxford Brookes University. Particular strengths in biosciences and IT and a strong base of ‘homegrown’ businesses have characterised the high tech sector and led to growth of 116% in the sector between 1991 and 2001.

6.5 Oxford is widely considered to be a key driver of economic growth in the South East which, in turn, is one of the main engines of growth of the UK economy. The strategic significance of Oxford is emphasised in the Regional Economic Strategy (RES) which identifies Oxford as a *Diamond for Growth*. The city is an anchor to which the Oxford-Cambridge Arc concept is tied and was recently identified as a key location within a broader South and East “super-cluster” concept. With the combination of an internationally renowned brand and the proven ‘track record’ of the high-tech cluster there can be little doubt as to Oxford’s strategic value to the regional and national economies. Oxford’s future development needs to be considered in this context and its unique role must be reflected in policies which maximise, rather than stifle, this asset, especially if, as forecast, economic growth in the UK is likely to slow.

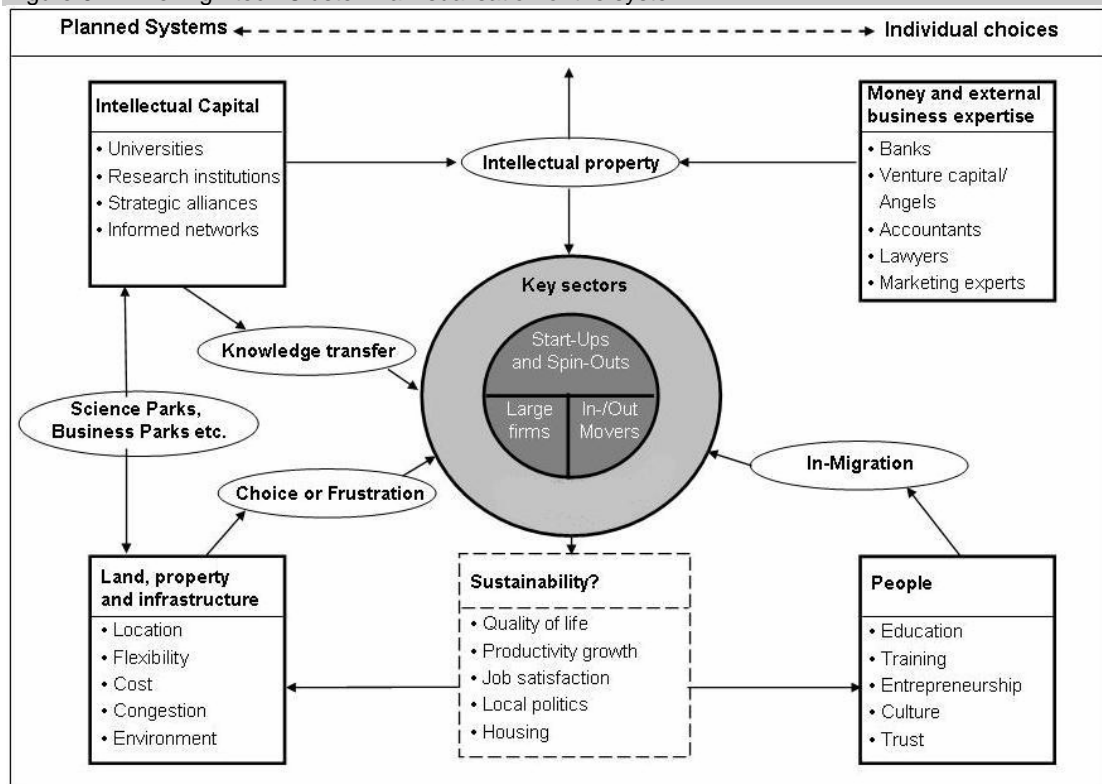
6.6 It is essential that sufficient employment land is made available for the growth of the whole high-tech cluster, of which supporting business services are an essential part. Failure to do so could slow growth of the sector and result in potential productivity gains generated by leading-edge research being lost to the region and the nation.

Growth in the high-tech sector requires a growing and supportive high-tech cluster

6.7 The ‘Cambridge Phenomenon’ demonstrates the importance of considering the growth of high-tech businesses as part of a broader cluster which includes the supporting sectors (especially financial and business expertise), intellectual capital (universities, research institutions including hospitals, strategic alliances etc), people (including education, training, culture, entrepreneurship and trust), land, property and infrastructure. This is illustrated in Figure 6-1 below. It is essential that policy makers recognise that a healthy high-tech sector requires a healthy cluster. Planning policies must therefore ensure that there is sufficient land for both the R&D based activities at the core of the high tech cluster, and for a range of supporting business, financial and technical services which are essential for realising the core’s potential, as well as to provide job opportunities for all Oxford’s residents.

6.8 A recent Employment Land Study by Nathaniel Litchfield and Partners has demonstrated that more land is needed in the city accommodate demand. In planning terms it is desirable that safeguarded land is released for such purposes prior to review of Green Belt policy.

Figure 6-1: The High-tech Cluster – a visualisation of the system



Source: Adapted from the ‘Cambridge Phenomenon Revisited’, SQW - © SQW Ltd 2000

High-tech growth must not lead to complacency

- 6.9 As previously mentioned, Oxford's high-tech economy grew rapidly between 1991 and 2001 and is now considered to be one of Europe's leading high-tech centres. However there has been a significant downturn in employment in the high-tech sector since 2002. Whilst this is undoubtedly consistent with a national trend, most likely linked to a general economic slow-down, the dot-com collapse and subsequent reductions in the availability of venture capital, it is noticeable that Oxford has experienced a more rapid decline than Cambridge. Whilst there is no definitive explanation for this, there is little doubt that high cost of commercial property and land and labour constraints outlined in the Oxford Employment Land Study acts to reduce Oxford's competitiveness. The same report warns of the need to "guard against complacency and take steps to ensure it remains competitive in the long term³⁵", a sentiment echoed in these conclusions. Oxford's past successes in the establishment of a high-tech cluster does not guarantee future competitiveness.
- 6.10 One major difference when comparing Oxford with Cambridge is the relative importance of the supporting sectors within the Oxford economy which account for a much higher proportion of total employment than Cambridge. The current and future growth of this sector therefore needs to be reflected in employment land allocations. The recent stagnation of the high-tech sector, at a time when the service sector had grown, serves to highlight further the importance of balanced provision for employment growth.

Oxford requires balanced growth

- 6.11 The importance of the Oxford's research base and the emergence of the high-tech sector as a cornerstone of the economy have been widely recognised. However, even with Oxford's relatively high proportion of employees within the high-tech sector it is important to remember that a huge majority (approximately 92%) of the workforce in the City of Oxford is employed in 'non-high-tech' activities. The research in Chapter Five shows that Oxford requires balanced economic development both to support high-tech activities and to meet the needs of all its citizens.
- 6.12 Firstly, the requirement for balanced economic development is essential for the growth of the high-tech sector. High-tech businesses do not operate in isolation; they require a support infrastructure and services to enable further business growth. It is essential that sufficient allowance is made for a variety of economic activities.
- 6.13 Secondly, an examination of employment data shows that, the types of employment in Oxford are indicative of a mixed economy with a significant proportion of lower value and administrative jobs. Data suggests that there is also some polarisation within the labour force; whilst there is a high proportion of highly qualified workers (NVQ4 and above) there is a higher than expected proportion of people with no qualifications. Future employment provision must therefore account for this range of skill levels. This is further reinforced by data from the Index of Multiple Deprivation (IMD) 2004 which indicates significant pockets of deprivation in the city: 12% of Oxford's Super Output Areas (SOAs) are in the bottom 20% of most deprived SOAs nationally.

³⁵ Oxford Employment Land Study 2006 - Nathaniel Lichfield and Partners p95

- 6.14 Thirdly, data from the National Employer Survey (2005) indicates higher than average employment vacancies and skills gaps suggesting a constrained labour market. This suggests that businesses will therefore need to attract employees in from outside the city which will further increase traffic congestion. This strengthens the case for a well connected peripheral site which is accessible from both from the city and surrounding districts. A peripheral site would also be preferable in order to facilitate the movement of general office uses out of the central area, thereby freeing up space for high-tech businesses which need to be located close to the University.

Oxford would benefit from a greater range of property provision

- 6.15 Comparisons between Oxford and Cambridge show that, despite facing similar issues relating to high-tech growth and land constraints, the range of provision differs considerably. Cambridge offers a range of medium sized business parks in the City of Cambridge and to the north, south and west. In contrast, the vast majority of R&D and general business space in Oxford is to the south of the city with two major sites (Milton Park and Harwell) dominating. Furthermore, both Oxford Science Park and Oxford Business Park are located to the south of the city centre. This means that there is a limited choice in terms of business space, especially if Oxford is to meet the variety of needs of business. The high-tech sector has specific needs and the mix of recent spin-outs and established multinational companies suggests this diversity should be reflected in the choice and type of sites and units available. This is also true in the expanding support sector where general B1 space needs to meet the requirements of inward investors and major HQ functions alongside smaller service companies. As a result, there is a strong case that the Oxford economy could benefit from increased diversity in terms of size, type and location of its business parks.

Location of growth: Concentrated vs. dispersed

- 6.16 There are numerous parallels between the planning issues in Oxford and Cambridge. Both are home to world famous Universities which (together with their colleges) are significant landowners, and both face the common challenges of supporting growth of the high-tech sector in the context of a constrained, historically important, city centre environment. However, the strategic policy response to this combination of opportunities and problems is completely different. In the Cambridge sub region, the majority of new development – of both housing and employment - will be focused on Cambridge, in the form of new communities on the edge of the city and in one or more new settlements and, secondly, in the Market Towns. Following formal adoption of the Structure Plan, the inner boundary of the Statutory Green Belt around Cambridge was reviewed, and where necessary areas are being removed from Green Belt designation to allow for the development of these new communities. In contrast, the Draft SE Plan proposes to retain the strategy of locating most new development in Oxfordshire in the Market Towns of Bicester, Didcot, Wantage and Grove, and within Oxford mainly on brownfield land. No expansion of Oxford, or review of the Green Belt boundaries, is envisaged.
- 6.17 Due to the dispersed character of settlements and employment sites in both Central Oxfordshire and the Cambridge area, both sub regions suffer from exactly the same problem of unsustainable, mainly car borne commuting, leading to serious congestion and a declining

quality of environment. But the Cambridgeshire local authorities have recognised the fact that previous planning policies were exacerbating the situation rather than solving it by creating a less sustainable pattern of development. Strategic policies now focus development on four major locations around the city, Northstowe new settlement to the north west and to a much lesser extent in the Market Towns. A mix of employment sites, suited to the needs of high-tech and other businesses, will be provided within these major development areas and elsewhere in the city. This includes business parks (with B1 permissions), science parks (with B1(b) permissions) and areas suitable for high value manufacturing (B1 and B2).

- 6.18 This is widely accepted as a positive step forward for sustainable development of the sub region, including protection of the character of both the city and the surrounding areas. The Structure Plan strategy for the sub region has been incorporated unchanged into the draft Regional Spatial Strategy, and was subsequently endorsed in the recently published EiP Panel Report.
- 6.19 The aspirations for Central Oxfordshire are very much in tune with the Vision for the Cambridge sub region included in the Structure Plan. We therefore find the differences in strategic development policies for the two sub regions surprising and feel there is a strong case for further sustainable growth to be concentrated on the fringes on Oxford. We would therefore endorse the recommendations of Nathaniel Lichfield and Partners that future allocations should focus on the ring road with access to the A34 and more specifically at the Peartree safeguarded site. We would agree, in line with the Cambridge experience, that “this would help maintain diversity of activities and employment and an approach of modest expansion of employment land would appear more in line with the managed growth aim of the City Council.³⁶”

³⁶ Oxford Employment Land Study 2006 - Nathaniel Lichfield and Partners p95

Annex A: Oxford and Cambridge Comparators

- A.1 The definition of the high-tech sector we have used is based on Butchart (1987) definition which was developed during the mid 1980s for the DTI. High-tech sectors, including both manufacturing and services, are identified which have an R&D intensity of at least 20% above the all-industry average, and an above average proportion of qualified scientists and engineers.
- A.2 Annual Business Inquiry data (ABI) and Annual Employment Survey (AES) have been used as the basis for this analysis, however, these data sources have limitations which should be kept in mind when looking at trends in employment and workplaces. There are differences in the methods of data collection between the ABI (from 1998 onwards) and the earlier AES data (pre-1998) and therefore our analysis is presented as pre and post 1998 as these changes are likely to affect the percentage employment growth rates. Both sets of data are based on returns from a sample of businesses which are subject to sampling error. These may become exaggerated at smaller geographical levels.
- A.3 The sectors used for this analysis are listed below and followed by a series of tables presenting data over the 1991 to 2004 period.

Sector Definitions

The high-tech sector

High-tech manufacturing

- Publishing specialist electronic (22.1)
- Pharmaceuticals and medical diagnostics (24.4)
- Composites and other advanced materials (included in 25.24, 26.15 and 26.82)
- Precision engineering and precision components (included in 28.52)
- Automated machinery and robotics (included in 29.56)
- Computer equipment and office machinery (30.01 and 30.02)
- Electrical equipment (31.1, 31.2, and 31.62)
- Electronic equipment and components, communications equipment and household TV, radio and audio equipment (32.1, 32.2 and 32.3)
- Aerospace and related activities (35.3)

High-tech services

- Telecommunications (64.2)
- Software development, consultancy and support (72.2)
- Web/internet services (included in 72.6)
- Other computer services (72.1, 72.3, 72.4, 72.5)
- R&D (73.1 and 73.2)
- Architectural and engineering activities and related technical consultancy (74.2)
- Technical testing and analysis (74.3)

Supporting services

- Hotels (55.1)
- Restaurants (55.3)
- Canteens and catering (55.5)
- Post and courier activities (64.1)
- Telecommunications (64.2)
- Monetary intermediation (65.1)
- Other financial intermediation (65.2)
- Activities auxiliary to financial intermediation (67.1)
- Accounting/book-keeping activities etc (74.1)
- Advertising (74.4)
- Labour recruitment etc (74.5)
- Investigation and security activities (74.6)
- Industrial cleaning (74.7)
- Miscellaneous business activities (74.8)
- Cargo handling (63.11)
- Storage and warehousing (63.12)
- Other supporting land transport activity (63.21)
- Other supporting water transport activity (63.22)
- Other supporting air transport activity (63.23)

Supporting services – business and financial services only

- Monetary intermediation (65.1)
- Other financial intermediation (65.2)
- Activities auxiliary to financial. Intermediation (67.1)
- Accounting/book-keeping activities etc (including management activities and business consultancy) (74.1)
- Advertising (74.4)
- Labour recruitment and provision of personnel (74.5)

The high-tech sector and supporting services pre 1998

Employee analysis

Table A-1: ABI employee analysis 1991 – 1997 for the high-tech sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	1,403,200	7.5	160,900	8.6	273,300	9.5	20,400	12.4	18,500	8.2	9,500	13.6	6,000	7.3
1993	1,274,100	7.0	150,500	8.2	261,600	9.1	21,200	12.5	22,400	9.4	10,300	14.3	6,200	7.1
1995	1,352,700	7.2	164,700	8.5	293,700	9.9	26,400	14.0	25,000	9.9	9,700	12.9	5,400	6.2
1996	1,386,500	7.2	171,600	8.8	305,600	9.8	26,800	14.0	27,100	10.6	10,900	14.4	6,600	7.9
1997	1,414,400	7.1	179,600	8.7	307,000	9.5	28,800	13.8	25,700	9.9	12,300	15.5	7,400	9.5
% change 91-97	0.8		11.6		12.3		41.4		39.1		28.8		23.3	

Source: Nomis, Annual Employment Survey

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in employee numbers

Table A-2: ABI employee analysis 1991- 1997 for the high-tech manufacturing sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	588,200	3.2	72,100	3.9	113,900	4.0	7,900	4.8	7,600	3.4	3,800	5.4	3,400	4.1
1993	505,200	2.8	56,400	3.1	92,800	3.2	6,000	3.5	6,900	2.9	2,000	2.8	3,300	3.8
1995	556,100	2.9	66,100	3.4	106,300	3.6	10,800	5.7	8,300	3.3	3,400	4.5	2,300	2.6
1996	560,900	2.9	65,200	3.3	106,400	3.4	9,500	5.0	9,600	3.8	2,400	3.2	3,200	3.9
1997	562,300	2.8	66,400	3.2	104,100	3.2	9,100	4.4	9,900	3.8	3,000	3.8	3,600	4.6
% change 91-97	(-)4.4		(-)7.8		(-)8.6		15.0		30.4		(-)20.9		6.7	

Source: Nomis, Annual Employment Survey

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in employee numbers

Table A-3: ABI employee analysis 1991- 1997 for the high-tech services sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	815,000	4.4	88,900	4.8	159,400	5.5	12,400	7.6	10,900	4.8	5,800	8.2	2,600	3.2
1993	768,900	4.2	94,100	5.1	168,800	5.9	15,200	9.0	15,400	6.5	8,300	11.5	2,900	3.3
1995	796,600	4.2	98,600	5.1	187,400	6.3	15,600	8.3	16,700	6.6	6,300	8.4	3,100	3.5
1996	825,600	4.3	106,400	5.4	199,200	6.4	17,200	9.0	17,500	6.8	8,500	11.2	3,400	4.0
1997	852,100	4.3	113,200	5.5	202,900	6.3	19,700	9.5	15,800	6.1	9,300	11.7	3,800	4.9
% change 91-97	4.6		27.4		27.2		58.2		45.1		61.5		44.5	

Source: Nomis, Annual Employment Survey

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in employee numbers

Table A-4: ABI employee analysis 1991- 1997 for the supporting services (all)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	2,923,900	15.7	269,300	14.4	451,900	15.7	23,600	14.3	38,300	17.0	13,000	18.4	13,400	16.4
1993	2,967,800	16.3	278,200	15.2	462,100	16.1	22,900	13.5	33,000	13.9	11,600	16.1	12,700	14.5
1995	3,365,800	17.8	307,600	15.9	529,700	17.9	25,500	13.6	43,800	17.3	12,200	16.3	15,500	17.8
1996	3,438,200	17.9	308,600	15.8	558,900	18.0	24,900	13.0	46,000	18.0	12,400	16.4	15,800	18.8
1997	3,624,600	18.2	335,800	16.3	585,300	18.2	28,900	13.9	45,600	17.5	14,300	18.1	14,100	18.0
% change 91-97	24.0		24.7		29.5		22.6		18.9		10.5		5.2	

Source: Nomis, Annual Employment Survey

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in employee numbers

Table A-5: ABI employee analysis 1991- 1997 for the supporting services (business and financial services only)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	1,239,000	6.7	97,400	5.2	187,100	6.5	10,100	6.2	18,700	8.3	6,100	8.6	4,100	5.0
1993	1,258,100	6.9	98,400	5.4	188,200	6.6	10,300	6.1	14,100	5.9	6,000	8.4	5,300	6.1
1995	1,517,200	8.0	117,300	6.1	231,000	7.8	10,700	5.7	20,400	8.1	5,600	7.5	5,600	6.5
1996	1,561,600	8.1	115,300	5.9	251,500	8.1	10,500	5.5	21,000	8.2	5,800	7.6	5,900	7.0
1997	1,688,600	8.5	135,500	6.6	273,600	8.5	13,100	6.3	23,200	8.9	7,000	8.8	6,800	8.7
% change 91-97	36.3		39.2		46.2		28.9		24.2		14.9		64.7	

Source: Nomis, Annual Employment Survey

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in employee numbers

Workplace analysis

Table A-6: ABI workplace analysis 1991-1997 for the high-tech sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	80,850	7.2	9,650	8.3	18,100	9.7	1,100	11.2	1,400	8.3	350	10.9	500	13.3
1993	78,300	7.1	9,850	8.5	17,400	9.6	1,200	11.1	1,350	9.2	350	10.4	350	11.3
1995	130,500	7.6	17,600	9.0	29,050	9.9	2,100	11.3	2,350	9.7	600	12.2	700	11.6
1996	153,100	8.4	20,500	9.9	37,150	11.3	2,400	12.1	2,650	10.4	650	12.9	800	12.3
1997	174,750	9.9	23,500	11.5	41,600	13.6	2,550	12.7	2,900	12.3	700	13.2	850	14.6
% change 91-97	116.2		144.1		130.2		138.5		111.3		99.1		71.3	

Source: Nomis, Annual Employment Survey

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in the number of workplaces

Table A-7: ABI workplace analysis 1991- 1997 for the high-tech manufacturing sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	14,050	1.3	1,700	1.5	3,150	1.7	200	2.3	300	1.7	100	3.1	50	1.7
1993	13,650	1.2	1,700	1.5	2,800	1.5	250	2.3	250	1.8	100	2.3	50	1.7
1995	19,950	1.2	2,700	1.4	4,050	1.4	400	2.1	400	1.6	100	2.2	100	1.8
1996	23,300	1.3	3,150	1.5	5,050	1.5	450	2.3	500	1.8	100	2.4	100	2.1
1997	25,700	1.5	3,400	1.6	5,400	1.8	450	2.3	500	2.1	150	2.5	100	2.6
% change 91-97	82.9		96.6		70.1		113.9		81.1		35.1		58.1	

Source: Nomis, Annual Employment Survey

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in the number of workplaces

Table A-8: ABI workplace analysis 1991- 1997 for the high-tech services sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	66,800	5.9	7,900	6.9	14,900	8.0	850	8.9	1,100	6.6	250	7.8	250	5.7
1993	64,650	5.9	8,150	7.1	14,600	8.1	950	8.8	1,050	7.4	250	8.0	200	5.5
1995	110,600	6.4	14,950	7.6	25,000	8.5	1700	9.2	1,950	8.0	500	10.0	300	6.5
1996	129,800	7.1	17,350	8.4	32,100	9.8	1900	9.8	2,200	8.6	550	10.6	350	7.1
1997	149,050	8.5	20,150	9.8	36,250	11.8	2100	10.4	2,400	10.2	550	10.7	400	8.4
% change 91-97	123.2		154.4		142.9		144.7		119.0		124.5		56.7	

Source: Nomis, Annual Employment Survey

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in the number of workplaces

Table A-9: ABI workplace analysis 1991- 1997 for the supporting services (all)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	182,200	16.2	17,500	15.2	31,200	16.8	1,700	17.7	2,250	13.4	650	20.4	650	14.9
1993	190,600	17.3	19,200	16.6	31,950	17.6	1,700	16.0	2,450	16.7	600	17.9	600	16.9
1995	316,850	18.4	34,100	17.4	57,350	19.6	3,500	18.8	4,750	19.4	1,100	22.1	900	19.1
1996	340,650	18.8	36,450	17.6	65,400	20.0	3,700	18.9	5,050	19.7	1,100	21.9	950	19.3
1997	351,900	20.0	39,300	19.1	68,150	22.2	3,850	19.2	5,250	21.9	1,100	21.6	950	21.0
% change 91-97	93.1		124.4		118.3		128.7		133.4		74.1		50.5	

Source: Nomis, Annual Employment Survey

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in the number of workplaces

Table A-10: ABI workplace analysis 1991- 1997 for the supporting services (business and financial services only)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1991	83,250	7.4	7,650	6.6	14,850	8.0	750	8.0	1,000	5.9	350	11.1	300	6.4
1993	85,600	7.8	8,250	7.1	14,950	8.3	800	7.4	1,150	7.8	300	9.1	250	7.2
1995	137,700	8.0	13,900	7.1	25,100	8.6	1,500	8.1	2,100	8.5	500	10.3	350	7.5
1996	144,350	7.9	14,800	7.1	28,450	8.7	1,550	7.9	2,200	8.5	500	9.5	350	7.4
1997	148,900	8.5	15,900	7.8	29,850	9.7	1,650	8.2	2,250	9.5	450	9.2	400	8.3
% change 91-97	78.8		108.1		101.2		115.8		130.1		35.8		37.2	

Source: Nomis, Annual Employment Survey

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1991 and 1997 in the number of workplaces

The high-tech sector and supporting services post-1998

Employee analysis

Table A-11: ABI employee analysis 1998-2004 for the high-tech sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	1,474,500	7.0	177,800	8.1	321,800	9.4	28,100	13.3	37,400	12.4	11,400	14.3	15,700	16.5
1999	1,543,100	7.1	184,100	8.6	354,900	9.9	28,000	13.3	40,000	12.9	11,600	14.5	16,000	16.7
2000	1,613,700	7.4	191,900	8.6	367,500	10.0	31,900	14.4	40,400	12.9	11,800	14.2	15,400	16.3
2001	1,627,500	7.4	185,600	8.2	374,700	10.2	33,100	14.8	40,000	13.2	12,300	14.2	15,600	17.2
2002	1,575,100	7.1	181,100	7.9	365,600	9.9	30,700	13.3	39,300	13.0	11,600	13.0	16,000	16.9
2003	1,513,500	6.8	173,800	7.5	342,100	9.4	29,300	12.9	32,000	10.3	9,600	11.1	8,100	8.4
2004	1,475,100	6.5	163,700	7.1	334,600	9.2	28,300	12.6	30,800	9.8	8,700	10.4	7,700	7.9
% change 98-04	0.0		(-7.9)		4.0		0.5		(-17.5)		(-23.3)		(-50.5)	

Source: Nomis, ABI employee analysis

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in employee numbers

Table A-12: ABI employee analysis 1998 – 2004 for the high-tech manufacturing sector

Date	England	East	South East	Cambridge FUA	Oxford FUA	Cambridge	Oxford
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	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	579,800	2.7	66,900	3.1	108,100	3.2	10,000	4.7	10,500	3.5	3,300	4.2	3,600	3.8
1999	579,200	2.7	60,300	2.8	113,900	3.2	8,300	3.9	11,400	3.7	2,900	3.7	3,900	4.0
2000	568,500	2.6	62,100	2.8	110,300	3.0	9,800	4.4	12,600	4.0	2,900	3.6	4,100	4.3
2001	554,300	2.5	61,200	2.7	107,600	2.9	9,200	4.1	12,900	4.3	2,900	3.3	3,900	4.4
2002	513,300	2.3	59,000	2.6	99,900	2.7	8,800	3.8	12,300	4.1	3,100	3.5	4,300	4.6
2003	477,500	2.1	53,800	2.3	89,400	2.5	7,500	3.3	11,000	3.6	1,500	1.8	4,100	4.3
2004	458,900	2.0	49,800	2.2	86,000	2.4	7,500	3.4	11,100	3.5	1,400	1.6	4,100	4.1
% change 98-04	(-)20.8		(-)25.6		(-)20.4		(-)24.7		5.9		(-)59.1		12.5	

Source: Nomis, ABI employee analysis

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in employee numbers

Table A-13: ABI employee analysis 1998 – 2004 for the high-tech services sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	894,700	4.2	110,900	5.1	213,700	6.2	18,100	8.6	26,800	8.9	8,100	10.2	12,000	12.7
1999	963,900	4.5	123,800	5.8	241,000	6.7	19,800	9.4	28,500	9.2	8,600	10.8	12,100	12.6
2000	1,045,200	4.8	129,900	5.8	257,100	7.0	22,200	10.0	27,800	8.9	8,800	10.6	11,300	12.0
2001	1,073,200	4.9	124,400	5.5	267,100	7.3	23,800	10.6	27,000	8.9	9,400	10.9	11,600	12.9
2002	1,061,700	4.8	122,100	5.3	265,800	7.2	21,900	9.5	26,900	8.9	8,500	9.5	11,600	12.3
2003	1,035,900	4.6	120,000	5.2	252,700	7.0	21,700	9.6	21,000	6.8	8,000	9.3	4,000	4.2
2004	1,016,200	4.5	114,000	4.9	248,700	6.8	20,700	9.2	19,700	6.2	7,400	8.7	3,700	3.7
% change 98-04	13.6		2.7		16.3		14.3		(-)26.7		(-)8.5		(-)69.6	

Source: Nomis, ABI employee analysis

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in employee numbers

Table A-14: ABI employee analysis 1998 – 2004 for the supporting services (all)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	4,041,000	19.1	385,400	17.6	642,400	18.8	30,300	14.4	57,500	19.1	14,300	18.0	16,400	17.3
1999	4,196,300	19.4	376,000	17.5	719,900	20.0	33,400	15.9	65,000	21.0	14,900	18.7	19,900	20.7
2000	4,390,600	20.0	404,300	18.0	751,800	20.5	35,100	15.9	63,700	20.3	16,400	19.9	18,500	19.6
2001	4,450,600	20.1	411,100	18.1	739,900	20.2	34,800	15.6	55,500	18.3	16,000	18.4	16,200	17.9
2002	4,550,500	20.5	413,300	18.1	771,400	21.0	34,000	14.8	56,100	18.6	15,100	17.1	17,500	18.5
2003	4,562,400	20.5	426,900	18.5	757,800	20.9	35,000	15.5	68,600	22.2	14,300	16.6	18,300	19.0
2004	4,660,800	20.7	427,100	18.5	774,000	21.2	34,200	15.3	67,900	21.5	13,400	15.9	17,000	17.3
% change 98-04	15.3		10.8		20.5		12.8		18.2		(-)6.5		3.6	

Source: Nomis, ABI employee analysis

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in employee numbers

Table A-15: ABI employee analysis 1998 – 2004 for the supporting services (business and financial services only)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	1,813,400	8.6	162,200	7.4	288,400	8.4	14,100	6.6	30,600	10.2	7,400	9.3	7,600	8.1
1999	1,914,200	8.9	149,900	7.0	322,100	9.0	14,900	7.1	36,100	11.6	7,100	8.9	10,400	10.8
2000	2,016,200	9.2	162,800	7.3	334,100	9.1	15,200	6.9	33,600	10.7	7,600	9.5	9,200	9.8
2001	2,046,800	9.3	173,600	7.7	333,000	9.1	15,100	6.7	32,900	10.9	7,700	8.8	9,100	10.0
2002	2,049,800	9.2	169,800	7.4	343,100	9.3	14,200	6.2	29,300	9.7	7,700	8.7	9,000	9.5
2003	2,073,600	9.3	182,700	7.9	333,700	9.2	14,300	6.3	37,400	12.1	7,000	8.1	10,000	10.3
2004	2,117,900	9.4	180,400	7.8	339,900	9.3	13,200	5.9	34,900	11.1	6,200	7.3	8,400	8.5
% change 98-04	16.8		11.2		17.8		(-)6.0		14.0		(-)16.5		10.1	

Source: Nomis, ABI employee analysis

n = Employee number (rounded to nearest hundredth for data protection reasons)

% = Percentage of total employment. Percentages are calculated using original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in employee numbers

Workplace analysis

Table A-16: ABI workplace analysis 1998 - 2004 for the high-tech sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	180,350	10.0	23,650	11.6	42,350	13.1	2,600	13.6	3,000	11.6	700	13.9	500	10.6
1999	203,350	10.8	26,400	12.4	46,950	13.8	2,900	14.6	3,200	12.1	750	15.1	550	11.4
2000	208,400	10.9	27,150	12.4	48,000	13.8	3,000	14.7	3,350	12.4	800	15.0	600	11.9
2001	208,000	10.8	27,200	12.4	47,600	13.6	3,000	14.8	3,450	12.4	800	15.4	600	12.2
2002	202,000	10.5	26,450	12.0	46,350	13.1	3,050	14.9	3,400	12.3	850	15.7	650	12.4
2003	198,850	10.2	24,900	11.1	45,850	12.8	3,100	14.6	3,500	12.1	850	15.9	650	11.7
2004	190,350	9.6	23,850	10.5	43,500	12.0	3,000	13.9	3,400	11.6	800	14.7	650	11.3
% change 98-04	5.6		0.7		2.7		14.8		14.2		13.8		21.0	

Source: Nomis, ABI workplace analysis

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in the number of workplaces

Table A-17: ABI workplace analysis 1998 – 2004 for the high-tech manufacturing sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	22,900	1.3	3,000	1.5	4,800	1.5	450	2.2	450	1.8	100	2.3	100	2.1
1999	23,400	1.2	3,050	1.4	4,900	1.4	450	2.2	450	1.8	100	2.5	100	2.3
2000	23,400	1.2	3,050	1.4	4,900	1.4	450	2.1	450	1.7	100	2.2	100	2.2
2001	23,000	1.2	3,000	1.4	4,750	1.4	400	2.0	450	1.6	100	2.2	100	2.2
2002	22,600	1.2	3,000	1.3	4,650	1.3	450	2.1	450	1.6	100	2.1	100	2.1
2003	22,220	1.1	2,900	1.3	4,600	1.3	400	2.0	450	1.5	100	2.0	100	2.1
2004	22,000	1.1	2,900	1.3	4,550	1.3	400	2.0	450	1.5	100	2.0	100	2.0
% change 98-04	(-)4.1		(-)3.7		(-)4.7		(-)1.4		(-)2.4		(-)5.1		7.7	

Source: Nomis, ABI workplace analysis

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in the number of workplaces

Table A-18: ABI workplace analysis 1998 – 2004 for the high-tech services sector

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	157,400	8.7	20,800	10.1	37,550	11.6	2,200	11.4	2,500	9.8	600	11.6	400	8.4
1999	179,950	9.6	23,400	11.0	42,050	12.4	2,450	12.4	2,750	10.3	650	12.6	450	9.1
2000	185,000	9.7	24,100	11.0	43,050	12.4	2,550	12.6	2,900	10.8	650	12.8	450	9.6
2001	185,000	9.7	24,250	11.0	42,800	12.2	2,600	12.7	2,950	10.8	700	13.3	500	10.0
2002	179,400	9.3	23,550	10.7	41,700	11.8	2,650	12.8	2,950	10.7	700	13.5	550	10.3
2003	176,600	9.0	22,000	9.8	41,250	11.5	2,650	12.6	3,050	10.5	750	13.9	500	9.6
2004	168,400	8.5	20,950	9.3	38,950	10.8	2,600	11.9	2,950	10.0	700	12.7	500	9.3
% change 98-04	7.0		1.4		3.6		17.9		17.3		17.6		24.4	

Source: Nomis, ABI workplace analysis

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in the number of workplaces

Table A-19: ABI workplace analysis 1998 – 2004 for the supporting services (all)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	342,300	18.9	36,400	17.8	63,950	19.8	3,650	19.0	4,900	19.2	1,050	20.9	900	18.7
1999	368,650	19.7	38,850	18.2	70,200	20.7	3,950	19.8	5,400	20.2	1,100	21.7	950	19.4
2000	391,400	20.5	42,050	19.2	75,200	21.6	4,150	20.4	5,700	21.0	1,200	22.9	1,050	20.5
2001	399,200	20.8	43,270	19.7	77,550	22.1	4,300	20.9	5,850	21.1	1,200	23.1	1,050	20.8
2002	414,500	21.5	44,650	20.2	81,200	23.0	4,350	21.0	6,150	22.3	1,200	22.8	1,150	22.4
2003	430,450	22.0	46,450	20.8	83,950	23.5	4,600	21.8	6,950	24.0	1,300	23.8	1,300	23.9
2004	452,300	22.9	48,600	21.5	88,400	24.5	5,000	23.0	7,450	25.3	1,400	25.6	1,400	24.8
% change 98-04	32.1		33.5		38.2		36.1		51.1		31.6		49.9	

Source: Nomis, ABI workplace analysis

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in the number of workplaces

Table A-20: ABI workplace analysis 1998 – 2004 for the supporting services (business and financial services only)

Date	England		East		South East		Cambridge FUA		Oxford FUA		Cambridge		Oxford	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1998	151,650	8.4	15,850	7.8	29,350	9.1	1,700	8.9	2,250	8.8	500	10.1	400	7.9
1999	167,400	8.9	17,400	8.2	32,900	9.7	1,850	9.4	2,500	9.5	550	10.7	400	8.3
2000	179,300	9.4	19,050	8.7	35,450	10.2	2,050	10.1	2,700	10.0	600	11.6	450	9.0
2001	185,000	9.7	19,700	9.0	37,200	10.6	2,100	10.3	2,850	10.4	600	11.8	500	9.4
2002	192,450	10.0	20,300	9.2	39,650	11.2	2,150	10.4	3,100	11.1	600	11.7	500	10.0
2003	199,650	10.2	21,200	9.5	40,300	11.3	2,250	10.7	3,300	11.5	650	12.0	550	10.3
2004	209,550	10.6	22,100	9.8	42,100	11.6	2,350	11.0	3,500	11.9	700	12.6	600	10.6
% change 98-04	38.2		39.4		43.3		38.9		55.9		34.1		51.2	

Source: Nomis, ABI workplace analysis

n = Number of data units (rounded to nearest fiftieth for data protection reasons)

% = Percentage of total data units. Percentages are calculated based on original data prior to adaptation for data protection reasons

% change = Percentage change between 1998 and 2004 in the number of workplaces

The high-tech sector and supporting services: 1991 to 2004

Table A-21: Percentage change in employee numbers between 1991 and 2004, in the high-tech sector and supporting services

Date	England	East	South East	Cambridge FUA	Oxford FUA	Cambridge	Oxford
High-tech sector	5.1	1.7	22.4	38.7	66.5	(-)8.6	28.9
High-tech manufacturing	(-)22.0	(-)0.9	-24.5	(-)4.9	30.4	(-)64.1	21.3
High-tech services	24.7	28.3	56.0	66.5	80.4	27.9	38.7
Support services (all)	59.4	58.6	71.3	45.1	77.2	3.0	27.0
Support services (financial and business only)	70.9	85.2	81.6	30.2	86.8	1.6	104.9

Source: ABI employee analysis

Table A-22: Percentage change in workplaces between 1991 and 2004, in the high-tech sector and supporting services

Date	England	East	South East	Cambridge FUA	Oxford FUA	Cambridge	Oxford
High-tech sector	135.5	147.5	140.6	180.8	145.0	133.3	23.9
High-tech manufacturing	56.4	67.0	44.3	95.8	59.8	14.4	51.4
High-tech services	152.1	165.0	160.9	202.2	166.6	180.4	110.2
Support services (all)	148.2	177.6	183.2	194.6	231.9	117.9	115.3
Support services (financial and business only)	151.7	188.8	183.9	209.1	254.7	95.1	112.3

Source: ABI workplace analysis

VAT registered businesses

Table A-23: VAT registrations 1994 - 2004

Date	1994	2004	% change 94-04
England	145,515	158,535	8.9
East	16,020	17,580	9.7
South East	26,830	28,360	5.7
Cambridge FUA	1,470	1,550	5.4
Oxford FUA	1,995	2,315	16.0
Cambridge district	345	325	(-)5.8
Oxford district	280	330	17.9

Source: Nomis, VAT registrations

Numbers are rounded, to the nearest five, in order to avoid disclosure

Table A-24: VAT deregistrations 1994 - 2004

Date	1994	2004	% change 94-04
England	151,320	156,150	3.2
East	16,920	17,495	3.4
South East	27,680	28,245	2.0
Cambridge FUA	1,425	1,510	6.0
Oxford FUA	2,025	2,050	1.2
Cambridge district	255	300	17.6
Oxford district	270	285	5.6

Source: Nomis, VAT registrations

Numbers are rounded, to the nearest five, in order to avoid disclosure

Table A-25: VAT stocks at the end of the year 1994 - 2004

Date	1994	2004	% change 94-04
England	1,361,080	1,553,800	14.2
East	159,750	183,675	15.0
South East	242,140	287,175	18.6
Cambridge FUA	15,590	18,235	17.0
Oxford FUA	19,245	23,740	23.4
Cambridge district	2,975	3,500	17.6
Oxford district	2,545	3,260	28.1

Source: Nomis, VAT registrations

Numbers are rounded, to the nearest five, in order to avoid disclosure

Annex B: Business park provision in Oxford and Cambridge

Business park provision in Oxford

Table B-1: Business Park provision in the Oxford area

Name of Park	Size (Floorspace in sq m)	Planning consent/type of space
Oxford Business Park	77,000	B1 office
Oxford Science Park	40,500 (rising to 65,00 sq m)	R&D office and laboratory
County Trading Estate	14,100	Mixed - light industrial, office
Milton Park, Abingdon	330,000	Multiuse – variety of sectors and activities
Abingdon Business Park	35,000	Mixed – office and warehousing
Abingdon Science Park	N/A	R&D office and laboratory
Begbroke Science and Business Park	22,000 (of which 6,000 sq m has been built)	Office and laboratory space
Oxford Industrial Park, Kidlington	11,500	Mixed office and light industrial
Oxonian Park, Kidlington	11,800	Industrial and warehousing
Harwell Science and Innovation Campus, nr Didcot	240,000	R&D and laboratory

Source: Floorspace data from Oxford Employment Land Study 2006 (Annex) - Nathaniel Lichfield and Partners

Oxford Business Park

- B.1 Arlington's Oxford Business Park comprises 35.6 ha (88 acres) of office and associated development land of which 70% is built or committed. The Park is the largest business park location within Oxford's ring road and provides accommodation for research and development, office and manufacturing uses. Over 40 companies and 4,000 employees are accommodated on the Park.

Oxford Science Park

- B.2 Oxford Science Park is a joint venture between Magdalen College and Prudential. Planning permission was granted in 1989 and the first building was opened in 1991. More than 40,000 sq m of office and laboratory space has been completed to date for science, technology and business occupiers. A further phase of development is currently underway and will extend the total development to approximately 65, 000 sq m.

County Trading Estate

- B.3 According to information from the Oxford Employment Land Study³⁷ this site is a mixed age and is in “fair condition”. This site would not normally be considered as being of particular

³⁷ Oxford Employment Land Study - Nathaniel Lichfield and Partners (March 2006)

relevance to this study, however much of the site has been acquired for new office and industrial development. As such, it could be a significant general business site in the future.

Milton Park

- B.4 Milton Business Park is one of Europe's largest multi use business parks. The Park is part of MEPC, owned by Hermes Investment Management. The 250 acre site hosts over 165 companies which, combined, employ around 6,500 people. The size of the park is reflected in a wide variety of clients from a range of sectors including construction, distribution, design and print, financial services, telecoms, automotive, IT & technology and R&D and laboratory. The Park is located 12 miles from Oxford near Abingdon.

Abingdon Business Park

- B.5 Abingdon Business Park is a mixed use park comprised of 35,000 sq m of office, business and warehouse units on a site to the south west of Abingdon town centre. These units are accommodated in three office buildings and two warehouses with unit sizes of between 250 to 2,500 sq m. Two further plots are being developed with for small to medium mixed-use units. A 1.6 acre site is currently available for design and construction of light industrial units.

Abingdon Science Park

- B.6 The Science Park consists on two two-storey pavilion-style buildings which provide a mix of office, R&D and high-tech accommodation.

Begbroke Science Park

- B.7 Begbroke Science Park is located 5 miles north of the centre of Oxford close to the ring road. The site was bought by Oxford University in 1998 and work began on an initial 6,500 sq m of office and laboratory space. The second phase of development is currently underway and will provide a further 5,500 sq m of office and laboratory space including a Centre for Innovation & Enterprise and an Institute for Advanced technologies.

Harwell International Science and Innovation Campus

- B.8 Harwell is owned by the United Kingdom Atomic Energy Authority (UKAEA). In the early 1990's the site underwent a major transition from a government research site into a centre of science and technology for business. Over 4,500 people are employed on the Harwell Science and Innovation Campus site. The site includes the Diamond Synchrotron, the UK's largest investment in science for 30 years.

Oxonian Park and Oxford Industrial Park, Kidlington

- B.9 Oxonian Park is located 6 miles north of Oxford in Kidlington. The development consists of 12 industrial and warehouse units in three separate blocks. Oxford Industrial Park is a mixed development also located in Kidlington.

Business park provision in Cambridge

Table B-2: Business Park provision in the Cambridge area

Start date	Name of Park	Size (Floorspace in sq m)	Planning consent
1970 Extension: 1999	Cambridge Science Park	145,540 sq m	Site pre-dates use class order but entry policy restricts to scientific research and development plus some ancillary services
1987	Vision Park	12,000 sq m	B1
1989 Extension 1998	Cambridge Business Park	29,357 sq m	B1
1998	Granta Park	55,000 sq m	B1b (R&D and High-tech), with a particular focus on life sciences in practice
Master plan 1999 Commercial space developed from 1986 (High Cross Research Park is part of this site)	West Cambridge	40,877 sq m of commercial research space in Master Plan of which 8,100 sq m developed to date	Consent restricted B1b R&D and high-tech uses.
1999	Cambourne Business Park	69,677 sq ft 50% developed to date. Next phase to include a 29,728 sq m Research Quarter	B1 – Business Use
1999	Cambridge Research Park	Outline permission for 55,741 sq m. 19,695 sq m developed to date.	B1a and B1b

Source: SQW Ltd

Cambridge Science Park

- B.10 Established in 1970 by Trinity College, the first company moved onto the site in 1973. The development grew slowly in the early years with 25 companies on the Park by the end of the 1970s. The Park grew strongly during the 80s with an innovation centre built in 1986. The 1990s saw further growth of the high-tech cluster, especially in internet and telecoms related activities. Towards the end of the 1990s the life sciences sector started to grow and became the dominant technology sector on the park. By the end of the decade there were 64 companies employing 4,000 people. The last six years has seen the emergence of new clusters including photonics, nanotechnology and materials science. The remaining area of 22.5 acres of Brownfield land has also been developed with five pre-let buildings constructed. The Park has been managed by Bidwells since its inception. The Park covers an area of 152 acres with a total of area of 145,540 sq m of R&D accommodation.
- B.11 The development of the Science Park preceded the current use class order and, as such, is not restricted to R&D. However Trinity College have a clear entry/planning policy in order “to

preserve the intrinsic nature of the Cambridge Science Park for the mutual benefit of all occupiers”³⁸. The use of buildings is limited to the following:

- Scientific research associated with industrial production
- Light industrial production which is dependent upon regular consultation with the tenants own research, development and design staff established in the Cambridge area; or the scientific staff of the University or local scientific institutions
- Ancillary activities appropriate to a Science Park.

Cambridge Business Park

- B.12 The major infrastructure requirements needed to serve the Toyota Motor Manufacturing Corporation provided the platform for the development of Cambridge Business Park and in 1989 the city commenced development of a site in the north east of the city opposite Cambridge Science Park³⁹. Stage One of the Park consisted of 118 acres of industrial land rough graded and serviced and an initial 5 buildings totalling 9,290 sq m built.
- B.13 Following the success of Phase one, the Crown Estate commissioned the development of the remaining 14 acres in 1999 increasing capacity to 29,357 sq m. The buildings on the Park have general B1 planning consent.

Vision Park

- B.14 Vision Park was developed on the site of the Chivers Jam Factory in Histon, 3 miles north of the city, in the 1980s. It comprises approximately 12,000 sq m⁴⁰ of office space in nine two and three story units. Site was developed for general business use and this is reflected in the range of tenants. Currently, Vision Park is home to a mix of public bodies (EEDA), financial and banking and IT.

Granta Park

- B.15 Work commenced on the 86 acre Granta Park site in 1998 and since that time approximately 55,000 sq m of low density labs and offices have been developed, including 10,000 sq m for TWI, who is a joint founder and owner of the Park. The Park has R&D consent (B1b) and has focussed on the life sciences. As a result, proximity to Addenbrookes and the Sanger Institute are seen as specific advantages of the site. Currently Alizyme, Cambridge Antibody Technology, Keronite, PPD Development, TWI, Vernalis, Gilead Sciences and UCB are located on the Park.

Cambourne Business Park

- B.16 The Cambourne Business Park is planned to provide nearly 70,000 sq m of general business and research space. Phase One commenced in 1999/2000 and accounts for approximately

³⁸ UKSPA Directory 2006/07

³⁹ http://www.city.cambridge.on.ca/cs_econdev/realest_listingmaps.php?mid=1

⁴⁰ Cambridge Phenomenon Revisited 1999

half of the development and includes offices for Convergys, Citrix Systems, Regus, Campbell Soups and South Cambridgeshire District Council.

- B.17 There are plans for construction to begin on a 50,000 sq ft building in late 2006. The remainder of the site is marketed as the Research Quarter. This will comprise 320,000 sq ft of office and laboratory accommodation to be developed in three phases. Detailed plans have been developed for two 2,787 sq m laboratories though demand for lab space is currently limited. The exact mix of office (B1A) and R&D space is unclear as the general B1 consent for the whole site enables the developers to respond to market demand.

Melbourn Science Park

- B.18 Melbourn Science Park is located in the village of Melbourn, 9 miles south of Cambridge. It is owned by The Technology Partnership Group and is home to a broad range of companies engaged in pharmaceuticals, biochemistry, communications, printing, electronics, mechanical engineering, testing and technology consulting. The site covers 17 acres and 60,960 sq m of business space in nine buildings.

Peterhouse Technology Park

- B.19 Peterhouse Technology Park is located three miles to the south east of Cambridge on the edge of Fulbourn village. It consists of 15,000 sq m of B1b space.

West Cambridge

- B.20 In 1999 Cambridge University has developed a Master Plan concept for a site to the west of the city bordered by the M11 (to the west) and Madingley Road (to the north). At that time, the site contained a number of University buildings including the Cavendish Laboratory and the Veterinary School as well as the High Cross Research Park, which included Schlumberger, the CADCentre (now Aveva) and the British Antarctic Survey. The updated Master Plan (2003) for the site outlines plans for further development on the site including University research institutes, University accommodation and a commercial research area. The master plan illustrates 41,000 sq m gross external floorspace planned for Commercial Research. Of this total, 8,100 sq m has been developed (the Microsoft Research Laboratory) leaving approximately 32,900 sq m to be developed. The planning consent is for research and high-tech activity (B1b).

Cambridge Research Park

- B.21 Cambridge Research Park, owned by Slough Estates, has outline consent for a 600,000 sq ft of premier office and research and development space in a low density 45 hectare site 5 miles north of the city. Building commenced in 1999 and to date 19,695 sq m has been built with agreement to build a further 3,065 sq m building. Based on the original planning consent there is therefore 32,981 sq m to build out. Planning consent for the site is for B1a and B1b activity. In addition, there are also plans to develop a hotel at one end of the site.