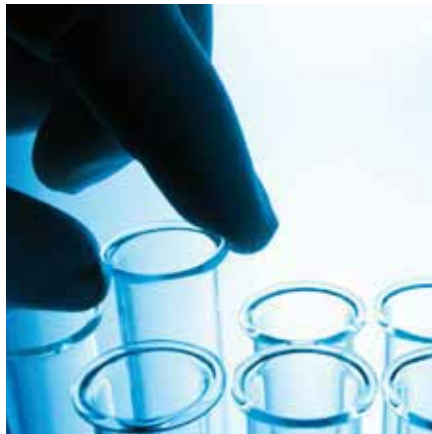


east of england technopole report

an overview of the UK's leading high-technology region



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1. The East of England Technopole

The East of England Technopole is the group of publicly funded organisations operating in the East of England whose mission is to support enterprise and innovation. The group includes the directors of Enterprise Hubs and managers of relevant programmes.

The overall mission of the Technopole is to improve the range and quality of facilities and business support available in the Region, particularly for companies based on technology or who are perceived to be capable of fast growth.

The objectives of the Technopole Group are to:

- Encourage the flow of information on new projects and initiatives between members of the Group and to work together for the benefit of business customers.
- Identify the key organisations involved in business support in the East of England for the purpose of accurately signposting business customers.
- Publicise the advantages and opportunities in the East of England in order to attract and retain appropriate businesses to the Region.
- Identify gaps in the provision of support for business and to lobby for resources to fill such gaps.

The East of England Technopole Group includes:

Babraham Research Campus (Cambridgeshire)	Environment East (Peterborough)
Bedford i-lab (Bedford)	Hauser Forum (Cambridge)
BioPark (Hertfordshire)	Hethel Engineering Centre (Norwich)
BTC Stevenage Enterprise Hub (Hertfordshire)	Innovation Martlesham (Suffolk)
Building Research Establishment (BRE) (Watford)	Norwich Research Park (Norwich)
Butterfield Green Innovation Centre (Luton)	OrbisEnergy (Lowestoft)
Colworth Science Park (Bedfordshire)	St John's Innovation Centre (Cambridge)
East of England Production Innovation Centre (EPIC)	

In addition, the Group includes organisations running programmes that are of benefit to knowledge-based businesses within the region, including Business Link East, The Association of Universities in the East of England and PA Consulting Group (as deliverers of the Manufacturing, Design and Innovation Advisory Services in the East of England).

2. Context

What used to be said specifically about Cambridge is now true of much of the East of England: that while it contains few locations of significant physical height, it has abundant human and intellectual highs. During the seventeenth century, Oliver Cromwell, a native of Huntingdon, would remould British politics as Lord Protector; and Puritan emigrants from East Anglia brought to New England a work ethic that would be one of the foundations of success for the later American republic.

During the twentieth century, the region built on strengths in sectors as diverse as information technology, pharmaceuticals and environmental sciences to become one of the most creative and research-intensive locations in Europe.

This report provides an overview of examples of centres of innovation and enterprise activity ('technopoles') across the East of England. Specifically, the report is focused upon providing:

- For visitors and potential investors: a summary of the region-wide ecosystem of innovation and enterprise activities within which global start-ups have been nurtured, and into which multinational corporations have directed investment to support their open innovation activities.
- For regional firms: information on the type and location of the diverse and complementary support services available for innovation and enterprise across the region.
- For policymakers and support service providers: information on the mechanisms currently being used to develop the region-wide network of support, and to highlight areas of success and on-going need.

The report draws upon publicly-available data, and is structured around three main sections providing:

- An introduction to the economy of the East of England and the mechanisms for supporting innovation and enterprise.
- An overview of selected organisations and activities focused upon supporting innovation and enterprise (e.g. Enterprise Hubs, universities and research institutes, science parks and incubators, technology consultants, investors, and professional support service providers).
- Links to sources of further information.

This report is not intended to be a directory of business support provision in the East of England. Numerous examples of such directories already exist and a selection of these can be found at the end of this report.

3. Facts and Figures on the East of England

3.1 Overview¹

The use of technology to expand productivity is not new in the East of England. In the seventeenth century, 'Gentlemen Adventurers' (spiritual ancestors of today's venture capital firms) under the Earl of Bedford drained the swampy fens to increase the area of arable land. Then as now, contacts with mainland Europe came into their own, with reclamation works conducted from 1621 under the experienced Dutch engineer Cornelius Vermuyden, who was later (1628) knighted for his services.

The East of England is the UK's leading innovation region, and comprises the counties of Cambridgeshire, Essex, Hertfordshire, Norfolk, Suffolk and the unitary authorities of Bedford Borough, Central Bedfordshire, Peterborough, Luton, Southend-on-Sea and Thurrock.

The East of England has one of the fastest growing populations of any UK region. Between 1981 and 2005 the region's population grew by over 14% to around 5.6 million, more than double the rate of the UK as a whole. It is expected to grow to 6 million by 2021. Home to over 430,000 businesses, in 2007 its 'gross value added' (GVA)² amounted to £109.9 billion per annum - 9.7% of the UK total - and GVA per head of £19,599 compared to the UK average of £18,631. The employment rate was 77.2% in the East of England, compared to the UK rate of 74.4%.

The East of England is home to the fourth largest regional economy in the UK and has one of the highest long-term growth rates. It is one of only three UK regions to be a net contributor to the Exchequer. It is also part of the Greater South East economy (which also includes London and South East England) and which accounts for 60% of the ICT businesses in the UK and collectively contains the largest biotechnology cluster in Europe.

The level of Business Enterprise Research and Development (R&D) is higher in the East of England than in any other region; at around £3.5 billion it is more than twice the UK average. It is also home to multinational corporations such as GlaxoSmithKline, BT, Ford, Unilever, BAE, Lotus and Philips, giving SMEs access to technology partnering opportunities and hence to larger markets than would normally be possible.

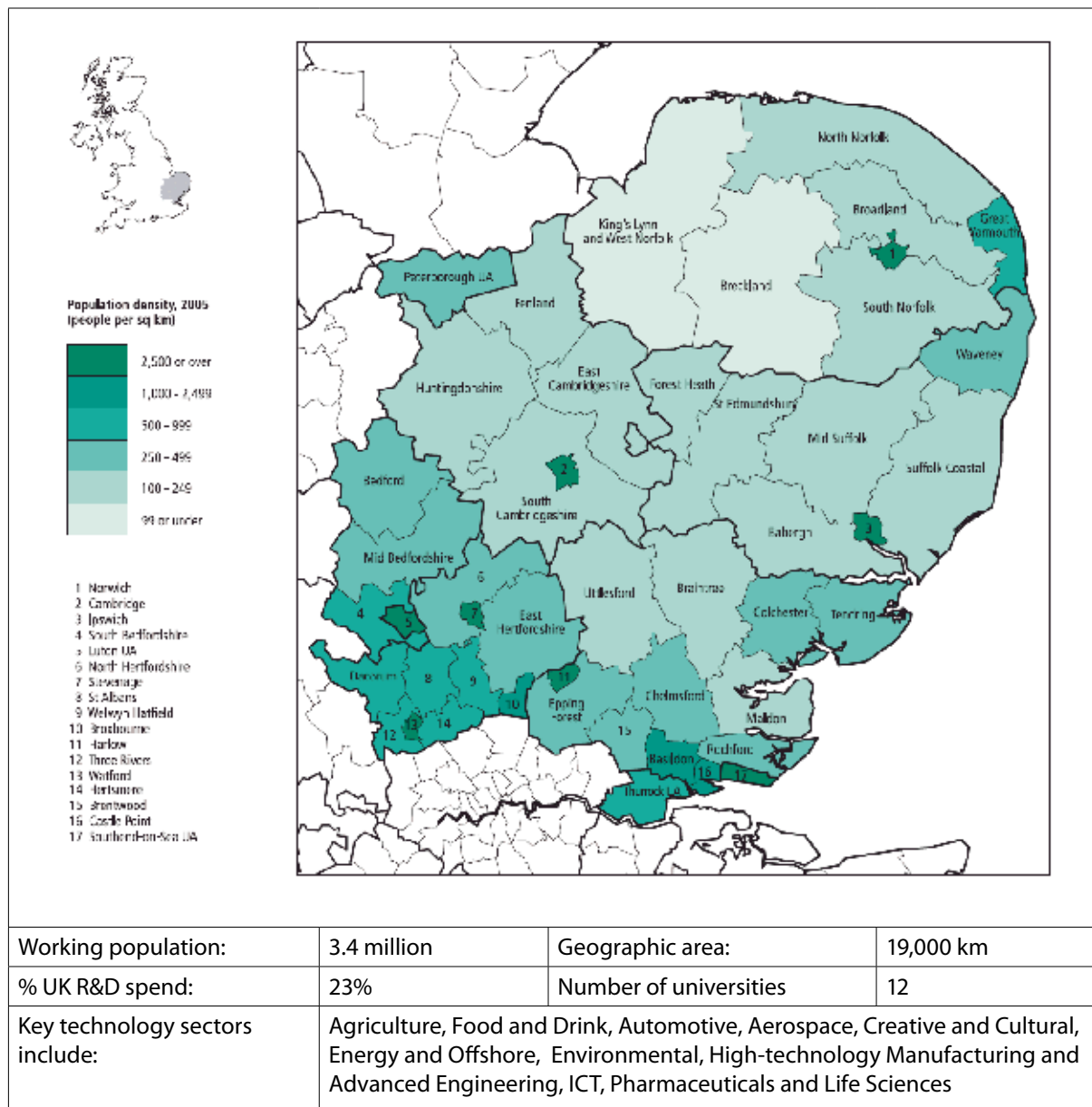
The East of England has excellent international transport links by air and sea. Stansted and Luton airports, with excellent motorway links (M25, M11, and M1), put the whole of Europe (and beyond) within easy reach. Fast access to London is an additional attraction for businesses, especially in the finance and media sectors. Proximity to the capital also allows mainland Europe to be reached quickly from London St Pancras international rail station.

There are seven major seaports in the region, including Thames Gateway in Essex and Felixstowe in Suffolk. Felixstowe is one of the largest and fastest-growing container ports in the UK, accounting for 40% of the UK's container traffic and is the fifth largest port in Europe. Proposed port expansions further underline the region's importance in providing economic 'arteries' to the rest of the country.

¹ Source www.insighteast.org.uk and www.statistics.gov.uk

² Gross value added is the difference between output and intermediate consumption for any given sector/industry. That is the difference between the value of goods and services produced and the cost of raw materials and other inputs used up in production (www.statistics.gov.uk)

Table 1: Regional overview³



³ http://www.statistics.gov.uk/articles/nojournal/EoE_web.pdf

3.2 Knowledge Economy

The strength of the East of England economy is due in large part to its research heritage, with spending on commercial research and development three times the UK average and world-class research activity in its leading universities; the University of Cambridge has more Nobel Prize winners (82) associated with it than any other university in the world.

The region is part of the Greater South East – a 'super region' which has knowledge capabilities that are vital to the continued success of the UK economy, including:

- five of the world's top ranked universities
- a place among the top 7 leading manufacturing areas in the world
- the third highest level of business expenditure on research and development in Europe
- a global financial hub
- a vibrant technology sector
- creative and cultural centres of excellence.

3.3 R&D Intensive Sub-regions

There is a wide range of technological expertise across the region, from telecommunications at Martlesham, to aviation and aerospace in Hertfordshire. Cambridge has world-class innovation in the pharma and health care sectors and Norwich is home to leaders in the food and crop science sectors. In Bedfordshire, Colworth is an international leader in the food, health and wellness and pharmaceutical technology sectors. Automotive engineering is strong in Hethel and Dunton, with technological advances in the built-environment being made at the Building Research Establishment (BRE) in Watford. Creative media is also strong around Norwich and Leavesden, as are services to the oil and gas industries around Lowestoft and Great Yarmouth. Similarly, Peterborough has shown a substantial growth in the development of cleantech businesses, of which 350 are located around the City (out of 1500 within the region as a whole).

Four key clusters within the region are:

(i) Cambridge

The development of the Cambridge high-tech cluster has been very much a bottom-up initiative. In 1978, there were around 20 high-tech companies in the area. In the intervening period, Cambridge has grown to become home to over 1,400 high technology ventures employing around 43,000 people. The biopharma sector has grown significantly since 1990, with over 230 companies in the East of England active in medical biotechnology, medicinal chemistry and biopharma. Collectively the regional sector is currently responsible (both directly and indirectly) for an estimated 30,000 jobs.

Cambridge is one of the top four regions in Europe in terms of total institutional investment into innovative start-ups, and is number one in Europe in terms of investment per capita. Spin-outs from the University of Cambridge have received more venture capital investment than any other UK university. Numerous significant scientific discoveries and inventions have been made at the University of Cambridge. This is reflected in the fact that the University is ranked as one of the top four universities world-wide. The Cambridge Technopole is one of a handful of regions in Europe to be consistently ranked by the European Commission as 'excellent for its support of innovative start-ups'. University of Cambridge people and technology have been at the heart of over 300 new high-tech ventures in the past 10 years, many of which now lead their industry sectors.

Cambridge is also home to an international technology consultancy cluster that applies leading scientific and technological know-how to commercial needs. This cluster has played a significant role in the growth of new industry sectors such as industrial inkjet printing, and a range of applications of wireless information and communication technologies.

The cluster continues to grow and a number of new initiatives based around Addenbrookes Hospital and the University West Cambridge site offer exciting possibilities for further expansion. Of the 1400 high technology companies within the sub-region only 200 are direct University spin-outs and the sub-region continues to attract interest from organisations such as Philips and Microsoft as the European headquarters for their Research & Development activities.

(ii) Norwich

Over the last 20 years, the Norwich region, focused on the Norwich Research Park (NRP) and including the University of East Anglia (UEA), has become recognised as a world-leading centre for research and innovation in:

- Earth and Life-Systems Science
- Food, diet and health
- Plant and microbial Natural Products
- Environmental Science

The NRP comprises a collaboration between the UEA, the Norfolk and Norwich University Hospital, and four independent research centres: the John Innes Centre, the Institute of Food Research, the Genome Analysis Centre and the Sainsbury Laboratory. With over 9,000 people the NRP has one of Europe's largest single-site concentrations of research in Health, Food and Environmental Sciences. An analysis of the most highly cited scientists in the UK over the past 20 years reveals that Norwich is ranked 4th after London, Cambridge and Oxford⁴.

The NRP has attracted many companies of varying size, due to the close proximity of the UEA, research institutes and a major hospital. These range from spin-out companies commercialising discoveries made from research at the NRP, commercial enterprises of the NRP member institutions, to companies who have moved to the NRP to take advantage of the facilities and the strength of the science base in the Park.

Currently the cluster is receiving further EEDA support to create a next generation science park integrated with the NRP and wider business community to provide an outstanding place to live and work as well as being an attractive and cost-effective location for inward investment. Based on these new developments, it is intended to enhance the existing research to create an additional 5,000 jobs by 2021.

(iii) Ipswich

Innovation Martlesham (an established ICT cluster, building on the success of Adastral Park, BT's R&D HQ which employs 3,800 people) has attracted more than ten major IT suppliers and six spin-out companies, as well as specialist organisations engaged in venture-funded spin outs, IP management and outsourcing.

The site hosts research units of four universities, whilst BT and its partners on site are engaged in the development of a wide range of products and services including 21CN - the next generation broadband network based on the growing convergence of voice, data and computing technologies. Where appropriate, Innovation Martlesham tenants are encouraged to develop close collaboration with BT research units and BT partners such as Alcatel, Cisco Systems, Fujitsu, Prysmian and Nokia Siemens Networks.

(iv) South Hertfordshire

South Hertfordshire houses a substantial concentration of multi-national biomedical organisations including Eisai, Roche, Glaxo SmithKline, Merck Sharp & Dohme, Biopark, the Royal Veterinary College, the University of Hertfordshire (including the schools of Life Sciences, Pharmacy, Health and Human Sciences, Postgraduate Medicine and the Medical Technology Innovation Centre), the National Institute for Biological Standards & Control, the UK Stem Cell Bank, Rothamsted Research as well as local life science SMEs.

⁴ New Scientist 1 July 2006

Eisai, the leading Japanese pharmaceutical company has recently made a £100 million investment in building its 'European Knowledge Centre', initially employing around 400 staff, in Hatfield. Eisai had stated that one of the investment attractions for it was 'being sited within the South Hertfordshire Biocluster'.

Further major R & D concentrations within the region, based on the presence of large technological multi-national businesses, exist as follows:

Location	Technologies	Multi-National Company
Dunton, Essex	Automotive / Engineering	Ford Europe
Colworth, Bedfordshire	Food & Pharmaceuticals	Unilever
Peterborough	Automotive / Engineering	Perkins Engines
Hethel, Norfolk	Automotive / Engineering	Lotus

The East of England region offers both depth and diversity in its strengths and opportunities. These are expected to ensure that the region emerges from the current economic climate in a position of strength, continuing its growth and development as a leading centre of innovation and technological progress.

4. How Innovation & Enterprise is Supported Across the Region

4.1 Public Support

The East of England has historically shown its adaptability to circumstances and an ability to respond quickly to public policy. During the Middle Ages and the early modern period, wool accounted for much of the region's wealth and was exported widely across Europe –its enduring legacy can still be seen in numerous buildings of great architectural merit, especially in Norfolk and Suffolk. After the industrial revolution, manufacturing expanded, notably in Bedfordshire and Essex. During the Second World War, open space and flat land – as well as proximity to Europe - made the East of England the location of choice for the rapidly-erected bases of the Royal Air Force and the US Air Force.

The East of England Development Agency (EEDA) is responsible for the development and implementation of strategies for the economic development of the East of England. EEDA's funding comes from central government departments and funds received are channelled into activities such as a Business Link in the East of England, East of England International⁵ and into supporting enterprise from innovation through specific initiatives.

4.2 Specialist Support for Innovation

EEDA is assisted in its delivery of a Science, Innovation, and High Level Skills programme by the Science and Industry Council (SIC). The role of the SIC is:

- To bring together the expertise of industry, higher education institutions and research institutes to realise effective communications between key regional players.
- To add value to existing mechanisms to support innovation by influencing the relationships among academic research and business communities in the areas of research, knowledge and technology transfer, innovation, learning and skills.
- To advise EEDA on its Innovation Strategy, and delivery of the components thereof.
- To play an advocacy role in representing the region nationally and internationally at a senior level (e.g. sitting on the Strategic Advisory Group of the Technology Strategy Board).

Nationally, the Technology Strategy Board (TSB)⁶ was established as an executive Non-Departmental Public Body in July 2007 in order "to stimulate innovation in those areas which offer the greatest scope for boosting UK growth and productivity". It has a substantial budget to achieve its aim. Alignment of activities between the TSB and all regional bodies (including EEDA) is ongoing, and a prospectus of complementary activity has already been created. The Regional Development Agencies and the SIC both enjoy direct input to the TSB's strategic and operational direction.

In the context described above, EEDA is encouraging enterprise from innovation through programmes which include :

- Enterprise Hubs
- Finance for Innovation
- Innovation Support Programmes

⁵ East of England International (EEI) – www.eeia.com is jointly funded by UK Trade & Investment (www.uktradeinvest.gov.uk) and by EEDA

⁶ <http://www.innovateuk.org/>

4.3 Enterprise Hubs

Enterprise Hubs in the East of England are publicly funded initiatives designed to support innovation and enterprise in early-stage, growth businesses. They frequently work closely with academic centres of excellence.

Enterprise Hubs are differentiated from Innovation Centres in that, in addition to providing flexible accommodation, they also offer a range of services to clients based outside the centre itself. Both Innovation Centres and Enterprise Hubs are often located on science parks, which also provide accommodation for medium-sized and larger enterprises.

Enterprise Hubs comprise:

- Specialist property. This can either be focused on the needs of start-up/growth businesses, with small units and flexible rental arrangements, or can comprise specialist laboratory space for, for example, biotech clients.
- Management on site. Management is not just responsible for the property but can provide direct business advice to the tenant and other businesses in the locality, which require specialist understanding of their needs if they are to grow.
- Networking ability. Hubs operate alongside and refer to other organizations, locally, nationally and internationally, as appropriate in the best interests of their clients.
- Equipment. Many Hubs can provide access to specialist capital equipment. Examples within the region include the new flow cytometry suite at NRP and protein analysis equipment at the Babraham Research campus as well as a range of highly specialised production equipment at EPIC.
- Programme delivery. Enterprise Hubs are frequently the delivery point for innovation support programmes such as Understanding Finance for Business. See sections 4.5 and 4.6.

The EEDA-supported network of Enterprise Hubs is a key component of the regional strategy of support for innovation and enterprise. The Hubs are focused on bringing together the region's knowledge-based industries by:

- Developing and growing a network to support the region's key knowledge-based sectors.
- Encouraging the development of networking groups in these key sectors and clusters.
- Supporting the development of a select number of incubators, Innovation Centres and science parks.
- Encouraging knowledge transfer and ensuring the delivery of leading edge innovation and enterprise support across the region.
- Supporting innovative businesses as they seek access to finance to accelerate growth and development.

The Enterprise Hubs are networked with each other, with other centres of innovation in the region as well as in the rest of the UK and internationally. Table 2 below provides examples of Enterprise Hub-type activities across the region.

Table 2: Organisations Providing Enterprise Hub-type Activities in the East of England⁷

Enterprise Hub Name	Flexible Accomm.	Sector Specialisation	Advice Available on site	Network Links	Description
Babraham Research Campus (Cambridgeshire) www.babraham.com	Up to 600 sm offices / labs	Bioscience	Yes	Yes	A world class biomedical research centre which provides combined office and laboratory space for start up and early stage ventures
Bedford i-lab (Bedford) www.bedfordi-lab.com	Up to 120 sm offices	None	Yes	Yes	Accommodation and support services for ICT, media, biosciences, finance, business services and advanced automotive sectors
BioPark (Hertfordshire) www.biopark.co.uk	Flexible office & lab space	Bioscience, Health, Techn.	No	Yes	Provides a wide range of ready to use chemistry and biology laboratory space together with office space and meeting rooms for bioscience and health technology enterprises.
BTC Stevenage Enterprise Hub (Hertfordshire) www.btcstevenage.co.uk	Offices & workshop space	None	Yes	Yes	The BTC Stevenage Enterprise Hub offers flexible accommodation and business support, focusing specifically on the biotechnology, aerospace and defence, and ICT sectors
Building Research Establishment (BRE) Enterprise Hub for the Built Environment (Watford) www.bre.co.uk/enterprisehub	No	Building & Construction	No	Yes	Provides a complete range of consultancy, testing and commissioned research services covering all aspects of the built environment
Butterfield Green Innovation Centre (Luton) www.be-hub.co.uk	Yes	No	Yes	Yes	An 85 acre business and technology park which will offer a selection of purpose built offices as well as design and build solutions for innovative companies.
Colworth Science Park (Bedfordshire) www.colworthpark.co.uk	Wide range of lab and office space	Food, health, wellness and pharma	Specialist advice available	Yes	The Hub focuses on food, health and wellness. The Park is a Centre of excellence for scientific research, development and commercialisation. Also provides office and laboratory accommodation. It is home to the research activities of Unilever
East of England Production Innovation Centre (EPIC) (Norwich) www.epic-tv.org	Office space & production facilities	Creative industries, digital media	Specialist advice available	Yes	A centre for the development of digital communications including one of the most advanced HD production facilities in Europe. The Centre offers space and incubator facilities for creative industry and digital media businesses.
Environment East (Peterborough) www.environmenteast.org.uk	No	Environmental industries	N/A	Yes	The environmental industries Hub in the East of England. The Hub covers all areas of environmental impact.
Hauser Forum(Cambridge) www.hauserforum.net	Pre-incubation units	Knowledge-intensive businesses	Yes	Yes	Due to be completed in January 2010, the Hauser Forum will provide access to a range of regional programmes to stimulate innovation and entrepreneurship on an 'open innovation' model

⁷ www.bizmapeast.co.uk/enterprisehubs.

Enterprise Hub Name	Flexible Accomm.	Sector Specialisation	Advice Available on site	Network Links	Description
Hethel Engineering Centre (Norwich) www.hethelcentre.com	Offices & workshops	High Performance Engineering / Manufacturing	Yes	Yes	Enabling businesses in the advanced engineering and manufacturing centres to realise the benefits of the knowledge based environment
Innovation Martlesham www.innovationmartlesham.com/	Range of accommodation for SMEs & corporates	ICT R & D	No	Yes	Planning and negotiations are currently underway to ensure a fully functioning enterprise Hub comes into operation at BT Martlesham in future years. See section 3.3(iii) of this report.
Norwich Research Park Enterprise (Norfolk) www.nrp.org.uk	Lab and office space	Health, food, plant, environmental sciences, information technologies, chemistry & materials.	Yes	Yes	A collaboration between UEA, the Norfolk and Norwich University Hospital, and four leading independent research centres - the John Innes Centre, the Institute of Food Research, the Sainsbury Laboratory and from June 2009 The Genome Analysis Centre.
OrbisEnergy (Lowestoft) www.orbisenergy.net	Office space	Offshore Renewable Energy	Yes	Yes	An energy efficient landmark building stimulating the development of the offshore renewable energy sector (wind, wave and tidal)
St John's Innovation Centre (Cambridge) www.stjohns.co.uk	Office space	Knowledge intensive businesses	Yes	Yes	Long-established and internationally renowned innovation centre providing a wide range of flexible accommodation and advice for early stage technology companies

4.4 Finance for Innovation

The Eastern region contains the greatest number of venture capital funding organisations and business angels in the UK, excluding London. Nevertheless, the need for funding and financial assistance to help innovative businesses start-up and grow, far outstrips the supply provided by such organisations. Accordingly EEDA provides a range of grants to assist innovative businesses as follows:

(i) Grants for Research and Development

The Grants for Research and Development product provides grants to help businesses carry out research and development work that will lead to technology innovative products or processes.

	Funding Available	What for?	%costs covered	Employees
Micro	£5k-£20k	to develop a simple low cost prototype of an innovative product or process	Up to 45%	Fewer than 10
Research	£20k-£100k	To investigate the technical and commercial feasibility of innovative technologies	Up to 60%	Fewer than 50
Development	£20k-£250k	To develop a pre-production of a new product or process that involves a technological advance	Up to 40% if under 50 employees or 35% if 50+	Fewer than 250

For application forms and further information see: www.bizmapeast.co.uk/finance/grants/

To test the commercial viability of innovative business ideas, EEDA's Proof of Concept grant (to be renamed Proof of Market grant) enables the entrepreneur to gain an independent review of the commercial viability of an innovative business idea by defining the market and potential customer needs.

	Funding Available	What for	% costs covered	Employees
Proof of Concept	£5k-£20k	To define and quantify the market opportunity for a business idea	75%	Fewer than 250

(ii) Innovation Vouchers

Innovation Vouchers are designed to help businesses in the East of England purchase academic expertise from the region's universities to support innovation and business improvement. The voucher will entitle businesses to purchase specialist consultancy up to the value of £3000, which will provide up to one week of consultancy.

Easy to apply for and easy to spend, the vouchers enable businesses to work with academic institutions to investigate and resolve a business issue, quickly, efficiently and through a source not previously utilised.

For further details of how Innovation Vouchers can be used contact www.eeda.org.uk/3572.asp

iii) KEEP (Knowledge Partners East of England)

Knowledge Partners East of England (KEEP) is a three-way partnership between a company, a local university and a recent graduate. It aims to help businesses achieve something different - a project where the expertise and skills of the university and a high-calibre graduate would be beneficial in the planning and implementation of the project.

Examples of how KEEP can benefit companies include:

- to develop and implement a marketing plan for a new product
- build a web site or integrate databases
- improve manufacturing processes.

KEEP projects are short-term, usually up to six months, and are aimed specifically at small and medium-sized businesses. The project requires the business to make a contribution of 60% of the total cost of the project. The projects complement the Knowledge Transfer Programme run by the Technology Strategy Board, which may set up projects lasting up to 2 years.

Note: The KEEP programme is to be renamed the Shorter KTP's scheme (Knowledge Transfer Partnerships) and will (subject to final approval) be enhanced through additional funding from the Technology Strategy Board and the European ERDF fund.

For further information about KEEP projects contact: www.eeda.org.uk/3470.asp

(iv) European Funding

The European Union provides funding programmes to help member states regenerate their economies and create new jobs. Some help is available, through these programmes, for eligible businesses in the East of England.

To find out what help is available see: www.bizmapeast.co.uk/finance/european-funding/

(v) Low Carbon Innovation Businesses

The Carbon Connections Development Fund managed by the University of East Anglia and funded by the Higher Education Funding Council for England has been set up to support organisations with innovative projects for carbon reduction. Established in 2006, the fund will continue to seek out, encourage and invest in carbon-saving innovation, either through technological advance or behavioural change.

A new, separate and larger ERDF-funded Low Carbon Venture Capital Fund is currently being established, operated by UEA and with a separate fund manager (to be appointed). The fund will operate as a conventional venture capital fund focused specifically on low carbon technology businesses.

For further details of the funding available for low carbon innovation businesses, contact:
www.uea.ac.uk/lcic/cc

4.5 Innovation Support Programmes

A range of cross-cutting programmes are available to all knowledge-intensive businesses in the region. These programmes and the wide-ranging support information available, are business-focused and address the major challenges facing growing businesses. They are accessible through the Enterprise Hubs or through the EEDA website (www.bizmapeast.co.uk). Such programmes include:

(i) Understanding Finance for Business

Funded by EEDA, the Understanding Finance for Business Programme (UFFB) was launched in June 2009 to help SMEs identify the right type of finance for their stage of development. The programme takes firms through a structured programme according to their needs, from an introductory half-day workshop in understanding the basics of finance to a full day specialising in topics such as operational funding, equity, grants and business planning.

For more information and to enrol on a workshop, see:
www.bizmapeast.co.uk/finance/understanding_finance/

(ii) Manufacturing Advisory Service

Funded by EEDA, the Manufacturing Advisory Service (MAS) works to increase the productivity of manufacturing companies across the Eastern region. Since 2005 MAS has helped over 1,500 businesses and generated GVA growth in the region of £10 million. MAS services are open to any company provided that it is engaged in manufacturing and regardless of size, although MAS mainly provides support for SMEs. Since mid 2009 the Manufacturing Advisory Service has been widened to provide design and innovation advice to businesses.

For further information or to contact MAS East direct go to: www.mas-east.org.uk/

4.6 Specialist Enterprise Hub Services

(i) Health Enterprise East

Health Enterprise East (HEE) is the Innovation Hub for Healthcare in the East of England, part of regional and national networks of NHS Innovation Hubs, supporting public and private sector healthcare providers. It provides a broad range of professional IP management services to the 40 NHS Trusts across the East of England (Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk) to enable their employees from all disciplines to identify, evaluate and take forward innovations which can benefit their patients.

HEE is funded by the Department of Health, Department for Business, Innovation & Skills (BIS) and East of England Development Agency (EEDA).

To contact HEE direct go to www.hee.org.uk

(ii) InCrops

The InCrops Enterprise Hub has built a new team to provide advice and guidance on new opportunities for crop exploitation and commercialisation through to product development. Since early 2009 the InCrops team has been offering support to existing SMEs as well as new company registrations.

Services include:

- Confidential discussion of initial ideas
- Access to:
 - free consultancy-based advice from within the InCrops partnership
 - scientific, knowledge transfer, patent or branding technical advice
 - product development support and partnership facilitation
 - finance or investment
 - various kinds of public sector support

For more information on the InCrops service contact: www.incropsproject.co.uk

(iii) London Technology Network (LTN)

LTN provides businesses with solutions to their R&D needs by providing a single point of targeted access to the vast pool of expertise in the academic research base across London, the East and South East. They assist and facilitate one-to-one meetings, 'roadshows', site meetings and topical networking events with potential business partners. Simultaneously LTN offer a forum to promote UK research through more effective interaction between the industry and the academic research base.

To contact LTN direct go to: www.ltnetwork.org

(iv) Renewables East

For investors, business owners, academics and others with an interest in renewable energy – Renewables East provides a gateway to sources of further information. It works in three key areas:

- Offshore Renewable Energy
- Bio Energy
- On-site Renewables

Renewables East is working with diverse organisations to build a common agenda and achieve seamless cooperation, in order to see the East of England at the forefront of renewable energy innovation.

Renewables East can be contacted at: www.renewableseast.org.uk

4.7 European Business Support

The European Enterprise Network (EEN)

EEN offers support and advice to businesses across Europe and helps them make the most of the opportunities in the European Union. Services are specifically designed for small and medium enterprises but are also available to all businesses, research centres and Universities in the East of England.

Services available to businesses:

- A brokerage service; using partner search databases and international networking events, to help applicants exploit their own technology or to source technology, identify potential commercial partners to export their products or to source new suppliers.
- A one-stop shop enquiry service for businesses, providing information on European legislation, policies and market opportunities.
- Assistance to tap into EU funding programmes (particularly the Framework Programme for Research and Development): Develop the research and innovation capacities of SMEs by identifying synergies with other research organisations, fostering technological cooperation and holding brokerage events.

EEN also enables SMEs to share research results and participate in research programmes. It offers a means to getting individual SME voices and concerns heard in Europe and information about consultative processes from the European institutions. EEN also monitors the implementation of EU policies in the field of competitiveness and innovation.

For further information contact: www.businesslink.gov.uk/east/europe

4.8 Support for Growing Ventures

Table 3 provides a sample of the support and initiatives available to growing businesses in the region. To help address the confusion noted from many companies regarding access to appropriate support for innovation and enterprise, EEDA have developed a "Business Map" (accessible via www.bizmapeast.co.uk) and shown on the following page.

Table 3: Further Examples of Public Business Support Organisations in the Region

Organisation	Overview	URL
Business Link East	A regionally based government funded service supporting enterprise. Serving the pre-start to SME market with independent advice through Information Diagnostic and Brokerage	www.businesslinkeast.org.uk
Chambers of Commerce	The 6 Chambers of Commerce in the Eastern Region are independent member organisations which provide services and networks for their members. They work collaboratively to produce common programmes	www.cambridgeshirechamber.co.uk www.chamber-business.com www.hertschamber.com www.essexchambers.co.uk www.norfolkchamber.co.uk www.suffolkchamber.co.uk
East of England International	Support for businesses in developing international trade and Inward Investment	www.eeia.com
UK Trade & Investment	UKTI is the international trade arm of the UK Government. It provides advice and services to businesses through locally based international trade teams.	www.uktradeinvest.gov.uk
National Federation of Enterprise Agencies (NFEA)	Representative body of Enterprise agencies	www.nfea.com

Figure 1: EEDA's Business Map



5 Academia, Research, Investment & Technology Organisations Supporting Growth

Most developed countries have recently woken up to the value of universities not just as centres of research and a means of educating the next generation but also as major collaborators with industry and as leading contributors to a higher quality of life. Knowledge workers often prefer to live in 'College Towns' and other outposts of learning and culture.

The East of England is home to both one of the oldest and most successful universities in the world and to some of the newest and most dynamic, as well as to a range of other research institutions.

Collaboration with industry in the region is not new either: as early as 1896, PYE Ltd was set up by a former employee of the Cavendish Laboratory in Cambridge; it became a leading maker of scientific instruments before branching out into radio and television sets. It is now owned by the Dutch multi-national Philips, a leading exponent of open innovation with a laboratory on the Cambridge Science Park.

5.1 Universities

Within the region there are 12 higher education institutions providing excellence in many disciplines (see Table 4).

Table 4: Higher Education Institutions in the East of England

Name	Overview
Anglia Ruskin University www.anglia.ac.uk	With over 25,500 students, Anglia Ruskin University is one of the largest universities in the East of England, and a major provider of part-time education. Anglia Ruskin University contributes actively to the economic strength of the region by supporting the growth and success of businesses, particularly small and medium sized companies. ARU has recently established an undergraduate course in enterprise and entrepreneurship.
University of Bedfordshire www.beds.ac.uk	Established in 2006 following a merger between University of Luton and De Montford University's Bedford campus, the University of Bedfordshire works closely with employers and forges close links with UK companies to provide a broad range of training and accredited industry programmes, with particular success in media and sport. The University of Bedfordshire has a close working relationship with the Enterprise Hub at Butterfield Green, Luton.
University of Cambridge www.cam.ac.uk	By any measure, the University of Cambridge is one of the world's leading universities. Its mission is to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence. The science and technology departments of the University carry out research across all major disciplines. Funding has recently been obtained from EEDA to stimulate local and regional entrepreneurial activity through the Hauser Forum.
Cranfield University www.cranfield.ac.uk	Cranfield's mission to transform knowledge into ingenious solutions in science, technology and management, places it at the forefront of some of the world's most practical, cutting-edge projects, from unique cabin evacuation research to finding life on Mars.
University of East Anglia www.uea.ac.uk	The University of East Anglia leads the world in environmental science research, growing its knowledge base through the Low Carbon Innovations Centre which houses programmes such as Carbon Connections and CRed. UEA has particular expertise in the areas of low carbon, healthcare, biodiversity, energy and the environment and climatic change. It also includes schools of medicine and pharmacy which have close links with the Norfolk & Norwich University Hospital.
University of Essex. www.essex.ac.uk	Areas of expertise include software engineering, robotics, telecommunications, biomolecular sciences, biotechnology, environmental biology and sustainable development, sports science, sociology and economics. The newly-created Essex Business School brings together the Schools of Accounting, Finance and Management and Entrepreneurship and Business.
University of Hertfordshire. www.herts.ac.uk	The University of Hertfordshire is focused on developing new and creative approaches to learning, teaching and research with a commitment to adding value to employers, enterprise and regional, national and international economies. UoH also has a wide range of specialist facilities that businesses can use to test and develop their products.

Name	Overview
Norwich University College of the Arts www.nuca.ac.uk	Norwich University College of the Arts provides art, design and media education from a unique campus at the heart of the city, with considerable interaction with local and regional business and not-for-profit communities. A programme of Continuing Professional Development provides short courses in subjects ranging from high-end software training in Photoshop and Final Cut Studio, to creative thinking and management. The College is closely linked to the creativity Enterprise Hub – EPIC.
The Open University www.open.ac.uk	The Open University offers supported open learning nationally and internationally; its regional centre in Cambridge supports students locally in the six East of England counties. The OU's extensive course and qualification portfolio at undergraduate and postgraduate level ranges across the arts, business studies, languages, social sciences, science, maths and technology and offers professional development in management, education and health and social care.
The Royal Veterinary College. www.rvc.ac.uk	The Royal Veterinary College is the UK's first and largest veterinary school and a constituent College of the University of London. The College provides support for veterinary and related professions through its three referral hospitals, diagnostic services and continuing professional development courses. Its research programme offers extensive opportunities for industry collaboration, directed to improvements in both human and animal health and welfare.
University Campus Suffolk. www.ucs.ac.uk	UCS degrees are jointly accredited by the Universities of East Anglia and Essex and employability is at the core of its programmes. UCS offers diverse qualifications in Arts, Business, Social Sciences, Health, Wellbeing and Science, ranging from foundation and postgraduate degrees, to Continuing Professional Development (CPD) courses.
Writtle College. www.writtle.ac.uk	Renowned for its specialist land-based and "green" environmental curriculum, Writtle College has a diverse knowledge base from business to equine and from science to sport, as well as horticulture and agriculture. Clients range from the World Bank to major supermarket chains to local SMEs.

5.2 Research and Technology Institutions

The region has a broad span of research and technology organisations which make a significant contribution to the region's reputation as a centre of research. Examples are listed in Table 5

Table 5: Research and Technology Institutions

Name	Sector	Location	URL
Aircraft Research Association	Aircraft industry	Bedfordshire	www.ara.co.uk/
Babraham Institute	Biotechnology and Biomedical	Cambridgeshire	www.babraham.ac.uk
Innovation Martlesham	ICT	Suffolk	www.innovationmartlesham.com/
Cambridge Institute for Medical Research	Medicine	Cambridgeshire	www.cimr.cam.ac.uk/
Cancer Research UK – Cambridge Research Institute	Cancer Research	Cambridgeshire	www.cambridgecancer.org.uk
CEME	Engineering and Manufacturing	Essex	www.ceme.co.uk
Centre for Sustainable Engineering	Engineering	Cambridgeshire	www.cseng.org.uk
FIRA International	Furniture	Hertfordshire	www.fira.co.uk
The Genome Analysis Centre	Genome Analysis	Norfolk	www.tgac.bbsrc.ac.uk/
Institute of Food Research	Food Technology	Norfolk	www.ifr.ac.uk
ITRI	Metallurgy (R&D of tin)	Hertfordshire	www.itri.co.uk
John Innes Centre	Plant Science and Microbiology	Norfolk	www.jic.ac.uk
Laboratory of Molecular Biology	Molecular Biology	Cambridgeshire	www2.mrc-lmb.cam.ac.uk/
MRC Cognition and Brain Science	Cognition and Brain Science	Cambridgeshire	www.mrc-cbu.cam.ac.uk
NERC British Antarctic Survey	Antarctic Research	Cambridgeshire	www.antarctica.ac.uk.
Rothamsted Research	Agriculture	Hertfordshire	www.rothamsted.ac.uk
Sanger Institute	Genome Research	Cambridgeshire	www.sanger.ac.uk
The Sainsbury Laboratory	Plant disease resistance	Norfolk	www.tsl.ac.uk/
TWI Ltd	Engineering (joining & structural integrity)	Cambridgeshire	www.twi.co.uk

5.3 Networks

Networking is a critical part of the success of clusters in the knowledge based economy and is an integral part of the offering of Enterprise Hubs. The Cambridge Network and ERBI are regarded as international exemplars of good networking practice.

(i) Cambridge Network (CN)

CN enables its members to work together & leverage their collective resources in new ways for the benefit of technology-enabled enterprise in the Cambridge sub-region. Founded in 1998, CN has more than 1,100 members across business, government & academe. The CN runs a range of special interest groups and events of specific relevance to knowledge-based businesses and manages a calendar of relevant events within the region.

(ii) ERBI

ERBI was established in 1997 as a networking and communications organisation to enhance the growth and development of biotechnology in the East of England.

Significant networks in the region include:

Table 6: Regional Networks

Network	Sector	URL
Cambridge Network	All High Technology	www.cambridgenetwork.co.uk
Cambridge Wireless	Wireless Technologies	www.cambridgewireless.co.uk
Central Innovation Network	Cross Sectoral	www.centralinnovation.co.uk
Eeegr	Energy	www.eeegr.com
EEESTA	Engineering, science technology	www.eeesta.org.uk
EMMA	Multimedia	www.emmauk.com
East of England Stem Cell Network (EESCN)	Stem cells, regenerative medicine	www.eescn.org.uk/
ERBI	Life Sciences, Healthcare, Biotechnology	www.erbi.co.uk
ERFI	Food and drink	www.erfi.co.uk
Essex Innovation Support Network	Multimedia and ICT design environmental technology and solutions	www.exdra.co.uk
Food East	Agri-food	www.foodeast.com
Food and Health Network	Food and health	www.foodandhealthnetwork.com
London Technology Network	Cross sectoral	www.ltnetwork.org/
Network	Sector	URL
Norfolk Network	Cross sectoral	www.norfolknetwork.com
Suffolk e-business club	e-commerce	www.eclubsuffolk.co.uk
UK CEED, Envirolink, CSeng, & Encluster	Environmental	www.ukceed.org www.cseng.org.uk www.encluster.org

5.4 Science Parks and Incubators

A number of the region's Enterprise Hubs fulfil an incubator role with accommodation, expertise and on site advice being available, Babraham Bioscience Technologies and St John's Innovation Centre being examples.

St John's Innovation Centre is widely regarded as an international model for such initiatives and supports businesses by providing:

Physical Incubation	'Home' for up to 60 high-technology related businesses
Virtual Incubation	Hands-on support for 500+ non-tenant nascent ventures
Rent-an-address	Provides mail and telephone services to 260+ non-tenant ventures
High Growth Starts Programme	Supports local companies with business planning and development
Enterprise Link Events	Networking, events and advice for early stage technology ventures

The United Kingdom Science Park Association (UKSPA) head office is based at Great Chesterford, Cambridgeshire. Table 7 below lists further examples of innovation centres and science parks located within the East of England.

Table 7: Examples of Science and Technology Parks

Name	Overview	Location	URL
Cambridge Research Park	600,000 sq ft of office, R & D and biotech space in a low density development	North Cambridge	www.cambridgeresearchpark.com
Cambridge Science Park	Set in over 150 acres, housing 90 companies in excess of 1.5m sq ft of accommodation ranging from small spin outs to multinationals	Cambridge	www.cambridgesciencepark.co.uk
Chesterford Research Park	250 acre site with 210,000 sq ft developed which second phase will increase to 600,000 sq ft. Houses Science, technology and biotechnology companies	Little Chesterford	www.chesterfordresearchpark.co.uk
Colworth Science Park	The Park is a Centre of excellence for scientific research, development and commercialisation. It also provides office and laboratory accommodation. It is home to the research activities of Unilever	Bedfordshire	www.colworthpark.co.uk
Cranfield Technology Park	Flexible accommodation with business support from the University	Cranfield	www.cranfieldtechnologypark.co.uk
Granta Park	Research park based in the Cambridge sub region.	Gt. Abington	www.grantapark.co.uk
Innovation Martlesham	A long term project to develop an Open Innovation Park on the 300 acre site which BT occupies	Martlesham	www.innovationmartlesham.com

5.5 Technology Consultancies

The Eastern Region has a plethora of technology consulting firms acting as facilitators and catalysts in the commercialisation of knowledge and technology in the region. The importance of these firms should not be underestimated as they form an important link between academia and industry, helping the region to be one of the best performing of the UK. Many have matured into research and technology organisations, developing and commercialising their own technology and know-how and spinning out successful high technology companies. To illustrate the range and diversity of consulting firms with operational bases in the region, a sample of such firms is given in Table 8.

Table 8: Examples of Technology Consulting Firms in the Region

Company	Sector	Location	URL
42 Technology	Healthcare, Technical Packaging, Product Innovation	Cambs	www.42technology.com
BHR Group Limited	Instruments & Engineering	Beds	www.bhrgroup.co.uk
BRE (Building Research Centre)	Innovation in buildings	Watford	www.bre.co.uk
Cambridge Consultants Limited	Cross-technologies	Cambs	www.camcon.co.uk
Cambridge Design Partnership Ltd	Instruments & Engineering	Cambs	www.cambridge-design.co.uk
Cambridge Product Design Ltd	Cross-technologies	Cambs	www.cpdesign.co.uk
EG Technology Ltd	Medical Devices & Equipment	Cambs	www.egtechnology.co.uk
Innovia Technology Ltd	Cross-technologies	Cambs	www.innoviatech.com
JMEC	Electronics & Optronics	Cambs	www.jmec.co.uk
J-Squared Ltd	ICT (non-software)	Cambs	www.jsquared.co.uk
MERL	Materials	Herts	www.merl-ltd.co.uk
Oakland Innovation and Information Services	Cross-technologies	Cambs	www.oakland.co.uk
Origin Product Design	Instruments & Engineering	Cambs	www.origin-product-design.co.uk
PA Consulting Group	Cross-technologies	Cambs	www.pa-consulting.com
Plextek	Electronics design/consult	Cambs/Essex	www.plextec.com
Product Innovation	Cross-technologies	Herts	www.productinnovation.com
Product Partners Ltd	Cross-technologies	Beds	www.productpartners.co.uk
Protus Ltd	Cross-technologies	Cambs	www.protus.com
Quality Technology (Cambridge)	Instruments & Engineering	Cambs	www.cambridgequalitytechnology.co.uk
RWCL	Instruments & Engineering	Essex	www.rwcl.co.uk
Sagentia Ltd	Cross-technologies	Cambs	www.sagentia.com
Sentec Ltd	Sensors Measurement & Control	Cambs	www.sentec.co.uk
Tarilian consultancy	Medical technology	Herts	www.tarilian-consulting.com
Team Consulting Ltd	Cross-technologies	Cambs	www.team-consulting.com
Technology for Industry Ltd	Materials	Cambs	www.tfi-ltd.co.uk
The Technology Partnership plc	Consultancy	Herts	www.ttp.com
Topexpress Limited	Sound & Imaging Systems	Cambs	www.saic.com
TTP Labtech	Human Health	Herts	www.ttplabtech.com
Vitality Consulting	Cross-technologies	Cambs	www.vitality-consulting.co.uk
Weldlogic UK	Materials	Cambs	www.weldlogic.co.uk/index.html

5.6 Venture Capital, Business Angels and Investor Networks

Investors typically prefer to be geographically close to opportunities and to their investments. Consequently, the region boasts the largest concentration of business angel and venture-capital funding organisations in the UK, outside London. The Cambridge sub-region is one of the top four regions in Europe in terms of total institutional investment into innovative start-ups, it is number one in Europe in terms of investment per capita and attracted 18% of all venture investment in the UK in 2007. Table 9 lists some of the regional business angel networks and Table 10 some of the major venture capital funds with operational bases in the region. It should be noted that a significant amount of the venture capital invested in regional firms comes from funds located outside the region.

Table 9: Business Angel Groups and Networks in the Region

Name	Overview	URL
Cambridge Angels	A business angel group with proven experience as successful entrepreneurs in technology and biotechnology	www.cambridgeangels.net
Cambridge Capital Group	A private equity syndicate of angel investors offering funding for early stage technology based companies	www.cambridgecapitalgroup.co.uk
Great Eastern Investment Forum	Long established business angel network with access to GEIF ventures, a co-investment fund	www.geif.co.uk
Beer and Partners	One of the oldest business angel networks who may charge for looking at a proposal. National coverage with local offices	www.beerandpartners.com
C2 Ventures	Invest in technology and media businesses	www.c2ventures.com
E-Synergy	London based group concentrating on early stage technology businesses	www.e-synergy.com
Norfolk First	Business angel group based in Norwich	www.norfolknetwork.com
Suffolk Investors Forum	Provides a direct link to a structured angel network which will invest between £100k and £1million	www.suffolkinvestor.co.uk/

Table 10: Venture Capital Funds with an Operational Base or Significant Activities in the Region

Fund	Fund(s) Size	Investment Range		Investment Areas
Amadeus Capital Partners www.amadeuscapital.com	£460m	-	£16m	Communications, networking & computing hardware & software, media, e-commerce, medical, clean energy technologies.
Avlar BioVentures www.avlar.com	£64m	£25k	£4.3m	Biotechnology, Life Sciences, Medical/health related.
Cambridge Enterprise Seed Funds (CESF) www.challengefund.cam.ac.uk	£4m	£10k	£250k	Investment proposals must have a strong connection to the University of Cambridge and the Babraham Institute. CESF also prefer to work on projects where Cambridge Enterprise owns some of the intellectual property. The University also recently established, on a philanthropic basis, the Discovery Fund, an evergreen fund providing resource for proof of concept, pre-licence, pre-seed and seed investments.
Cambridge Gateway Fund www.cambridgegateway.com	£35m	£1m	£5m	IT, telecommunications or life science ventures (Cambridge Gateway Fund is not currently investing in new opportunities and is now managed by Avlar BioVentures).
Chord Capital www.chordcapital.co.uk	€40m	€100k	€3m	Manages €40m of assets on behalf of ITF and the Cascade Fund. Invests in technology companies with an emphasis on "product ready" businesses, namely companies that have a marketable product and where scaled production can be demonstrated.
Create Partners (East of England Regional Venture Capital Fund) www.createpartners.com	£20m	£100k	£2m	All sectors, high growth potential companies in East of England CREATE can no longer invest in any new companies.
DFJ Esprit (including Prelude Trust) www.dfjesprit.com	£4b+	£250k	£12.5m	High growth potential ventures in virtually every major technology sector including information technology, cleantech, life sciences and emerging technologies - e.g. nanotechnology.
East of England Co-Investment Fund www.investeast.co.uk	£3.6m	£25k	£250k	Sector and stage agnostic but company must be beneficial to Objective 2 economies in region.
ET Capital www.etcapital.com	£13m	£20k	£750k	High-growth companies exploiting innovative application of technology.
GEIF Ventures www.geifventures.co.uk	£5m	-	£100k (£400k)	Co-invest into early growth businesses with GEIF angels.
IQ Capital www.iqcapital.co.uk	£35m	£100k	£3m	Seed, early stage and expansion funding for technology ventures.
TTP Venture Managers www.ttpventures.com	£34m, raising £30m	£500k	£2m	Early stage science and technology companies, mainly in IT and clean technology.

Note: Some of the funds are fully invested and are not taking on new companies; others are raising additional funds. For a comprehensive list of venture firms in the region and in the UK, visit www.bvca.co.uk or <http://www.financedirector.com/businessservices/venturecapital.asp>

5.7 Professional Service Providers

The region has also attracted high level professional firms, knowledgeable in providing a technology-related professional service to high-growth potential start-ups, fast growing and investment-intense firms (see Table 11).

Table 11: Examples of Professional Service Providers in the Region

Solicitors	Birketts	www.birketts.co.uk
	Eversheds	www.eversheds.com
	Hewitsons	www.hewitsons.com
	Mills and Reeve	www.mills-reeve.com
	Taylor Vinters	www.taylorvinters.co.uk/
	Taylor Wessing	www.taylorwessing.com/
	Wollastons	www.wollastons.co.uk
Accountants	BDO Stoy Hayward	www.bdo.co.uk
	Deloitte	www.deloitte.co.uk
	Ernst & Young	www.ey.com/uk
	Grant Thornton	www.grant-thornton.co.uk
	KPMG	www.kpmg.co.uk
	PWC	www.pwc.com/
Banks	Barclays	www.barclays.co.uk/business/
	Clydesdale	www.cbonline.co.uk/business
	Handelsbanken	www.handelsbanken.co.uk
	HSBC	www.ukbusiness.hsbc.com
	LloydsTSB	www.success4business.com
	RBS/Natwest	www.natwest.com/business.ashx
Patent Agents	Barker Brettell	www.barkerbrettell.co.uk
	Reddie & Grose	www.reddie.co.uk
	Marks & Clerk	www.marks-clerk.com
	IP21	www.ip21.co.uk
	Novagraaf Ltd	www.novagraafnorwich.co.uk/
	PBL	www.pbltechnology.com
	Dummett Copp	www.dummett.com
	W.P. Thompson & Co	www.wpt.co.uk
	UTEK	www.utek.co.uk
	HLBBshaw Ltd	www.hlbbsshaw.com
	Sanderson and Co	www.sandersons.co.uk
	Venner Shipley	www.vennershipley.co.uk
	Scott & York IP	www.scott-york.com

6. Growth Businesses

The region has seen outstanding growth in knowledge-based businesses over the last 30 years, the growth of the Cambridge cluster being a prime example. In 1978 there were around 20 high-tech companies in the Cambridge area. Today Cambridge is home to 1,400 high technology ventures employing around 43,000 people.

The Cambridge sub-region is merely one example of the growth and development of high technology businesses within the region over the last 30 years. The phenomenon can also be seen in a range of other locations throughout the region including the South Hertfordshire biocluster, the growth of offshore oil and gas technology in Norfolk and Suffolk and in many other areas.

The region is a highly attractive location for knowledge-intensive businesses. The recent decision by the Japanese pharmaceutical company, Eisai, to invest £100 million in its new European Knowledge Centre, employing around 400 staff, and locating it on the Hatfield Business Park, is a clear and unambiguous statement to this effect.

The environment, culture and infrastructure of the region provide unrivalled opportunities for the growth and development of knowledge-based businesses. Examples can be found throughout the region but a few examples of spectacularly successful such businesses over the last 20 years are:

Acteon Group (www.acteon.com)

Are specialist engineers serving the global offshore oil and gas industry. The company has grown its sales at a rate of over 71% per annum between 2004/5 and 2007/8 to reach £195m. In 2007 it took over competitors in Brazil and Singapore.

ARM (www.arm.com)

Advanced RISC Machines (ARM) span out of Acorn and Apple Computer's collaboration in 1990, with a charter to create a new microprocessor standard. In 2008 ARM produced revenues of over \$546 million and its processor-based chips were to be found in 95% of all mobile phones shipped globally.

Autonomy (www.autonomy.com)

Founded in 1996 and utilizing a unique combination of technologies borne out of research at Cambridge University, Autonomy was initially based within St John's Innovation Centre, Cambridge. The company has experienced a meteoric rise, currently has a market capitalisation of \$4 billion and is the second largest pure software company in Europe, with offices worldwide.

CSR (Cambridge Silicon Radio) (www.crs.com)

Founded in 1998 when it split away from Cambridge Consultants, CSR recorded 2008 revenues of \$695m. It is the largest global supplier of Bluetooth chips and has approximately a 50% market share. It was first listed on the London Stock Exchange in 2004.

Oceanteam 2000 (www.ot2k.com)

Smaller but showing extraordinary growth, Oceanteam 2000 was formed in 1999 when the employees of an offshore oil & gas company, based in Norfolk, formed their own business rather than relocate to Aberdeen. By 2006 the business achieved 206 percent annual sales growth to £20.1m and in 2007 was listed at number two nationally in The Sunday Times Fast Track 100.

7. Concluding Comments

Historically, the East of England has been a region of diversity and creativity, providing cultural and commercial icons for the rest of the country as disparate as Boudica (Queen of the Iceni, who heroically resisted Roman tyranny in the first century AD) to the Quaker Gurney, Buxton and Fry families, whose nineteenth-century regional firm, Gurney's Bank, grew through merger into the major international financial corporation, Barclays plc.

Innovation and growth in the region have also generally benefited from a hands-off approach, allowing many initiatives to start in response to current market needs and only to flourish if the need persists and the abilities of the managers allow. One important example is the so-called Cambridge Phenomenon, identified in print through an influential report with that title issued by the consultancy Segal Quince Wicksteed in 1985. The growth of Cambridge as a technopole was largely unplanned.

However, as clusters in the East of England grow and mature, light-touch guidance is required to ensure that across the region diversity does not lead to unnecessary duplication and complexity does not regress to complication. Even as laissez-faire a development as the Cambridge Phenomenon owed part of its origins to the 1967 Mott Report, issued by a sub-committee of the Senate of Cambridge University. Mott recognised that in seeking to maintain the character of the mediaeval city, planning policy since 1950 had meant turning away important new developments such as the creation of IBM's European Research Centre in Cambridge.

Had that persisted, Cambridge would have been condemned to become little more than an ancient university surrounded by a number of small R&D firms unable to grow. But policy changes from 1967 encouraged the construction of the first UK Science Park, the first major UK incubator and other infrastructure of enduring benefit to the region and the UK economy.

The challenge for policy makers and entrepreneurs alike over the coming years will be to take a step back from the considerable achievements to date to decide what needs to be simplified, what duplication can be eliminated, which initiatives need to be strengthened and how the numerous centres of creative excellence across the East of England can work better together without imposing a foolish consistency which, as Emerson famously commented, is 'the hobgoblin of little minds'. This report seeks to inform the policy dialogue between the public and private sectors.

That such a retrospective is possible shows how far the region has come since it hosted one of the earliest of all university spin-outs: in 1878, in response to the need to produce instruments to teach the recently-created Natural Sciences Tripos, the Cavendish Laboratory in Cambridge set up a workshop to make apparatus. Robert Fulcher, a mechanic employed by the laboratory, left the workshop to establish his own firm supplying equipment to the university.

Horace Darwin, son of Charles Darwin, assisted Fulcher on the design side; in 1881, Darwin purchased the business – the Cambridge Scientific Instrument Company. In 1898, PYE Ltd was but the first spin-out of this spin-out. A pattern of serial entrepreneurship and interlinked start-ups was established, not for the last time in the East of England.

The East of England Technopole has developed over the last 10 years to become one of the most significant areas of innovation activity in Europe. However, there are a number of issues that need to be addressed if the Technopole is to build upon – or even maintain – its success. These issues include the following:

Understanding and enhancing core strengths: Organisations within the East of England Technopole have developed significant capability around fundamental and applied research, product development, support for early stage commercialisation. However, the specific technologies and industry sectors in which the Technopole has strengths are not fixed. There needs to be on-going monitoring of the emerging technologies and sectors to ensure support is appropriately targeted. All this needs to be done as part of a more holistic monitoring of the performance of the Technopole.

Building scale: On certain measures, the East of England Technopole is relatively small when compared to the main global clusters. One way of building scale is to recognise the Technopole's core strengths and to support value creation from these strengths by partnering with other regions that have the complementary assets the Technopole lacks. The formation of the Greater South East 'Supercluster' may be one way of achieving this.

Strengthening linkages internally and externally: The numerous networks within the Technopole provide a very effective mechanism for ensuring the flow of information between different stakeholder groups and individuals. The Technopole has been less successful at building international links that extend these networks in a manner that delivers value to the Technopole. However, the example of the 2007 'Silicon Valley Comes to Cambridge' programme illustrates how value-adding international links can be developed for the benefit of the Technopole.

It is the intention of this document to demonstrate the strength of the region in enterprise and innovation. To enable the region to remain competitive, we welcome constructive comments as to how we may improve services to businesses in the East of England.

8. Sources of Further Information

Economic Data:

www.insighteast.org.uk

www.statistics.gov.uk/articles/nojournal/EoE_web.pdf

www.gos.gov.uk/goeast/economy

Regional Planning and Policies:

www.eeda.org.uk

www.gos.gov.uk/goeast/planning/regional_planning

www.eastofengland.uk.com

www.eera.gov.uk

Visitor Information:

www.eeia.com

www.visiteastofengland.com/

Notes



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