

Cambridge Science Park Founded by Trinity College in 1970

catalyst CAMBRIDGE SCIENCE PARK NEWSLETTER

East meets West on CSP

- > Royal Society of Chemistry links with China
- > Shanghai delegation at Trinity Centre

And more....

- > Breakthrough diabetes treatment
- > Queen's Award for CSP companies
- > Serial entrepreneurs and the Cambridge Phenomenon

New arrivals



Geneservice

Geneservice Ltd (GSL) is a new genomics products and service company formed from the Medical Research Council. GSL sell microbiological tools enabling gene and protein manipulation to a worldwide life science customer base. GSL also provides technology services to academic and commercial organisations including gene sequencing, mapping, typing and expression analysis.

www.geneservice.co.uk



Inion

Inion specialises in the development of biodegradable medical implants, a fast-growing segment of the global orthopaedics market. The new R&D centre at Cambridge Science Park is an addition to existing facilities in Essex, Finland and Oklahoma City in the US. www.inion.com



Lab21

Lab21 provides technically advanced clinical testing services that support the pharmaceutical industry and healthcare providers as we move towards personalised medicine. The company also provides instrumentation and services for monitoring pollutants and toxins in the environment. Lab21 offers a unique portfolio of cutting-edge molecular diagnostics, viral characterisation, pharmacogenetic tests and patient profiling services.



Frontier Developments

Frontier is one of the world's leading game developers, having built upon the innovative creations of founder David Braben. Frontier's games, including RollerCoaster Tycoon 3 and Wallace & Gromit: Curse of the Wererabbit, have received critical acclaim as well as achieving commercial success. Frontier is currently recruiting for its next-generation games console and handheld projects. www.frontier.co.uk



Neurascript

Neurascript provides information capture solutions that streamline the conversion of documents into useful electronic data. These solutions deliver significant business benefits: faster information processing, lower operational costs and guaranteed data integrity. Neurascript is part of DICOM Group PLC (London Stock Exchange, DCM), the global leader in the information capture market. www.neurascript.com



CacheLogic and Saviso Consulting

CacheLogic is a technology development company that provides a suite of complementary products delivering traffic management and network intelligence solutions primarily to the Internet Service Provider (ISP) and telecommunications sectors. CacheLogic's core product suite provides a carrier-grade solution that enables ISPs to make significant cost savings through the intelligent management of peer-to-peer traffic across their networks.

Saviso Consulting is a subsidiary of CacheLogic providing technology consulting, application development and solution design services focused on the needs of the internet infrastructure market. www.cachelogic.com www.saviso.com

Inspiring innovation

Cambridge Science Park Innovation Centre: the starting point for new hi-tech ventures

The opening of Cambridge Science Park Innovation Centre (CSPIC) provides accessible, practical and affordable facilities for new start-up and spin-out companies at the heart of one of Europe's most successful sites for hi-tech research and development.

"Securing the right facilities early on is absolutely critical for new hi-tech ventures – it can mean the difference between success and failure," explains Juliette Morgan of Bidwells.

"Small new companies with very limited funds can't afford to commit to long leases, but they need to have room to grow as necessary; Trinity College has responded to these very specific needs by creating a flexible yet affordable solution in CSPIC."

The Centre, which opened in June 2005, is designed specifically for companies and ventures still at that very early stage with teams of between one and five people. It offers furnished accommodation and a prestigious Cambridge Science Park address at an affordable price. It also provides flexibility, with leases that can be rearranged to accommodate more space as necessary or terminated with just one month's notice.

"Establishing our headquarters here provides us with a credible address which is respected around the world and a base from which we can develop important partnerships with other companies on the Park and here within the Innovation Centre itself," says Sunil Shah, Director of Oxygen Healthcare, which provides contract chemistry services to biotechnology and pharmaceutical companies from its office on CSPIC and via its research facilities in Ahmedabad, India.

"We love being here, being a part of the world-class group of companies that make up the Park and sharing the entrepreneurial spirit that is already evident in the Innovation Centre," he continues. "In time and with suitable growth, we would definitely consider moving to larger premises elsewhere on the Park – it seems like a very natural progression."

Cambridge New Media is another CSPIC tenant already seeing the benefits of this unique early-stage location. "There is something slightly different about CSPIC to other centres we looked at," explains Creative Director Mike Mitry. "There's a more communal feeling, and we've already started working on projects with other companies here.

"Because it's new, it's not full of companies that have been there for years and become settled in their ways. We want to be surrounded by fresh ideas and enthusiastic start-ups, and luckily that's exactly the way it seems to be going."

"There's a communal feeling here at CSPIC, and we enjoy being surrounded by fresh ideas and enthusiastic start-ups" Mike Mitry, Cambridge New Media

CSPIC tenants have access to a wide range of services including reception facilities, broadband internet and telephone connections, conference-style meeting rooms for up to ten people, data projectors and IT infrastructure. As members of Cambridge Science Park, they can also take advantage of inclusion on the Park's dedicated website (with its free vacancies and press release listings), nearby conference and leisure facilities at the Trinity Centre and the wide range of networking opportunities the location provides.

Nevertheless, this is not the first innovation

centre to be established on the Park: longerterm tenants will recall CICI and CICII, the flexible multi-let office buildings which were a part of the Park in the 80s and 90s. And with the successful St John's Innovation Centre literally across the road, what is it that makes CSPIC different from its predecessors.

"CSPIC is managed much more proactively than previous innovation centres here which were run by outside operators – this is a more comprehensive service to new start-ups, offering the kind of infrastructure new businesses really need," responds Juliette.

"We're sure that some of these companies will eventually graduate to larger accommodation elsewhere on the Park and that a wide variety of new ventures will establish themselves here. It's very quickly developing into a focal point for new talent and enterprise that can only benefit the companies themselves and Cambridge Science Park as a whole."

www.cambridgescienceparkinnovationcentre.co.uk



From left to right: Juliette Morgan, Bidwells; Laurence John, Amadeus Capital Partners; and Dr Tim Minshall, Centre for Technology Management, Institute for Manufacturing, University of Cambridge

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4

Current tenants include:

Andrew Bryce & Co

Andrew Bryce is an environmental and health and safety lawyer running a sole practice. He deals with a range of regulatory work for the waste and industrial sectors, in particular criminal defence.



Auriplex

Auriplex is a technology company which designs, produces and markets wireless communication systems. www.auriplex.com

RITANIABUILD CRESS FOTTES IN THE

Britaniabuild

Britaniabuild is an experienced building and renovation company which has worked on major projects for the University of Cambridge as well as for a variety of Cambridge Science Park tenants.

www.britaniabuild.com



Cambridge New Media

Cambridge New Media Ltd is a full service digital agency, specialising in web-based application development and the creation of standards-based accessible, elegant and userfriendly websites.

www.cambridgenewmedia.co.uk



Enecsys

Enecsys has developed proprietary power electronic control and integrated circuit technology to allow for the next generation of power conditioning units for grid-connected renewable energy applications, initially focusing on solar energy solutions. www.enecsys.com genapta

Genapta

Genapta Ltd is a spin-out from the Department of Physics at the University of Cambridge and supplies high-performance optical platforms for pharmaceutical screening, DNA sequencing and genomic testing. www.genapta.com



SimuGen

SimuGen's business is producing patented and proprietary gene profiling kits that predict substance toxicity cheaper, better and faster than standard methods, such as animal testing. www.simugen.co.uk

KMEO Ltd

KMEO Ltd is an IT software company developing security software mainly for the Windows platform. Currently a team of two people, its aim is to provide the most efficient software in every aspect of security.



Kodak European Research

Kodak's new Cambridge Research Centre will focus on key technologies in the area of display, commercial printing and health imaging, with the first phase group located in the Innovation Centre. The Research Centre is due to become fully functional in 2006. www.kodak.com

Oxygen Healthcare

Breathing new life into contract chemistry...

Oxygen Healthcare

Oxygen Healthcare is a provider of contract chemistry services to biotechnology and pharmaceutical companies from its offices in Cambridge, UK and research facilities in Ahmedabad, India. It offers international-class project management and communication from the UK at a price that is reflective of the lower research costs in India.

www.oxygenhealthcare.com

The Health Innovation Centre

The Health Innovation Centre provides training, testing and development for the NHS National Programme for IT in the East of England as part of a major restructure and integration of NHS information systems country-wide.



The International Education Consultancy

The International Education Consultancy (TIEC) is a multidisciplinary consulting company specialising in international education strategy and international student recruitment services. TIEC currently works with several leading institutions across the globe. The company's key activities are in Africa and the UK. www.tiec.co.uk

Systematically thinking

New CSP centre helps guide a major programme for change in the NHS

It is set to be the largest IT project ever undertaken – a £6 billion ten-year overhaul of the many different information systems in place throughout the National Health Service to create one integrated national network. Training, development and consultation carried out on Cambridge Science Park will play an important role in its long-term success. Catalyst talked to Tony Andrews, Director of the newly established Health Innovation Centre, to find out more.

"In terms of the scope and the scale of the National Programme for IT which is being rolled out across the NHS, I don't think there is anything like it anywhere else in the world," comments Tony.

"By 2010, we're looking to have replaced the huge variety of different systems currently in use with a system that means information can be shared and used more effectively across all parts of the country – saving time, money and improving the quality of healthcare."

Formally launched in its new facilities on Cambridge Science Park Innovation Centre on 15 November 2005, the Health Innovation Centre is funded directly by the NHS and forms a focal point for ongoing training, testing and development for the National Programme for IT for the East of England – breaking new ground in its outward-looking approaches to the challenges ahead.

"There are three main aspects to our work here," explains Tony. "Firstly, we're a regional test centre for new software: end users from across the East of England will come here to try out new systems, see what works well and what doesn't, and look at how it can be improved. It's not just technical capability we want to evaluate; we'll also be looking at our processes to see if there are any opportunities to improve these at the same time.

"Secondly, as that software becomes finalised and is ready to be released into the NHS, we'll act as a training centre for users in our region. As the pace of the implementation picks up, we're set to be extremely busy in this area over the next few years.

"The third strand to our work – and I think we are unique among the five regional clusters in the way we have approached this – is building links with the broader commercial sector so that we can benefit from the experience, expertise and outlook of those outside our own institutional world.

"That's one of the main reasons we have chosen to base ourselves on Cambridge Science Park – there are so many world-class hi-tech companies working literally right here on our doorstep that it gives us a great opportunity to interact with them and potentially develop some very valuable relationships.

"We believe that if you really want people to think differently then it's no good bringing

them to an NHSrelated building to do it, because immediately they'll start to think in their ordinary institutionalised way – these facilities give us the chance to break out of such routines.''

Indeed, thinking "outside the box" and challenging convention is built into the very fabric of the Health Innovation Centre, where flexibility of approach is a guiding principle.

"The only fixed area we have in the building is the testing centre, which will be in constant use; other than that, all furniture is mobile and our network is wireless," explains Tony. "Thanks to this flexibility, we can mock up the IT structure for all sorts of different environments: a call centre, an A&E department, a bed on a ward, a GP's surgery."

"There are probably many scenarios, opportunities and challenges that we'll need to address that we haven't yet thought of – that's perhaps the most exciting thing about this project," he concludes. "Because of that, it's important that we look outwards as much possible so that we can draw on the best ideas and widest range of experience available – being here on CSP will definitely help us do that."







Above: facilities at the new Health Innovation Centre

6

RSC forges chemistry links with China

Chinese minister joins anniversary celebrations

The Chinese Minister-Counsellor for Science and Technology was guest of honour at an event held by the Royal Society of Chemistry (RSC) at Cambridge Science Park to commemorate the 200th anniversary of the birth of its first president and to strengthen scientific links with the world's most populous nation.

Dr Baoquing Wang from the People's Republic

"The Royal Society of Chemistry has always been at the forefront of its field and I'd like to pay tribute to its sustained and significant contributions to science over many years," said Dr Wang.

"China itself has made huge progress in recent years in this field. In 1997, the People's Republic submitted 35,000 chemistry-related



From left to right: Sir Jack Baldwin, Dr Baoquing Wang (with a commemorative plate presented to him by the RSC) and Dr Simon Campbell

London embassy came to Cambridge Science Park on 7 September to celebrate the life and work of Thomas Graham, the eminent 19thcentury chemist after whom the organisation's Cambridge offices are named. Speaking to an audience which included members of the scientific, business and political communities, Dr Wang paid tribute to the history of the RSC and looked forward to a future of increased scientific collaborations between China and the UK. papers internationally; by 2003, this figure had grown to 93,000 papers, making us the fifth largest contributor to chemistry research worldwide.

"The Royal Society of Chemistry has always been at the forefront of its field" Dr Baoquing Wang

"We are very happy to celebrate our ongoing collaborations with the UK at an event such as this and to share the enjoyment of making new friends and partnerships. My Chinese colleagues regard the journals and work of the RSC as of the very highest quality, and the Ministry of Science and Technology will do its best to enhance relations between our countries and with the RSC for the benefit of science as a whole."

As Dr Wang pointed out, the RSC has already gone to considerable lengths to welcome the contributions of Chinese scientists, including providing guidelines for the submissions of papers in Chinese. Such submissions now account for 20% of the RSC's entire intake, a proportion which looks set to grow in coming years.

RSC President Dr Simon Campbell also spoke of the growing links between the two countries and of his organisation's efforts to support and develop these. "By 2012, China will produce 12% of the world's chemicals, and has great expertise and resources in this area," he said.

"We are very proud of our strong links with the People's Republic and are always looking to build on this. Earlier this year we sent a delegation to China to develop our ties with universities and scientists, and to explore ways of increasing the flow of scientific papers to our range of journals. We are confident that this relationship of mutual respect and benefit will go from strength to strength."

The event also involved the unveiling of a plaque commemorating the late Professor Sir Derek Barton, a former President of the RSC and winner of the Nobel Prize in 1969. The plaque was unveiled by eminent chemist Sir Jack Baldwin of Oxford University, who spent nine years under the tutelage of Barton, and spoke of his important contributions to research as well as the inspiration he engendered in students and colleagues alike.

www.rsc.org

Seeing through barriers

Technology without limits from Cambridge Consultants



Above: in-car radar technology developed by Cambridge Consultants can help detect pedestrians in dangerous positions and avoid accidents Below: entrance to Cambridge Consultants' offices on Cambridge Science Park



As its second longest-serving tenant and the common link in a variety of hi-tech companies based on it, there are few companies more closely connected with Cambridge Science Park than Cambridge Consultants. Catalyst spoke to Neil Cooper and Peter Bell about its multidisciplinary approach, international aspirations and the new radar technology which is making waves worldwide.

"About 100 companies can trace their origins back to us in some way – all but a tiny minority of these have been successful," explains Peter Bell, Cambridge Consultant's Head of Automotive, Transport and Defence. This hi-tech Midas touch has resulted in spin-outs such as Cambridge Silicon Radio, Alphamosaic (recently acquired by Broadcom) and Xaar.

It is the long-term result of a unique setup which sees in-house research and development concentrated in four key areas: healthcare and life sciences; automotive, transport and defence; wireless and telecoms technologies; and consumer, industrial and commercial products. Nevertheless, it is the cross-fertilisation of ideas and the ability to understand, refine and ultimately commercialise innovations from virtually all walks of life that more accurately characterises the ethos behind this home-grown success story.

"We've helped originate or develop a diverse range of ideas from the round teabag or the widget used in draught beer cans to Bluetooth wireless technology or new medical devices – there really is no boundary on the type of projects we get involved with," explains Neil Cooper, Press and Publicity Officer for the 250-strong team based on the Park.

"We're very good at the multidisciplinary nature of things – that's one of our key strengths," adds Peter. "Although we're trying to grow to become a larger company, we foster a small company culture where people interact and work across a variety of projects on a frequent basis. What remains constant is the quality of our team; we've always attracted very bright, driven and entrepreneurial people to work here."

One of Peter's most important current project areas neatly illustrates the long-term fruits of such an approach. Cambridge Consultants has been working on specialist radar technology for approximately 20 years, adapting and evolving its products according to new technological developments and changing market needs.

"Originally we began developing radar to measure ice flow for oil companies off the Alaskan coast, but in the end the rigs were never built so we had to look for new applications," he explains.

"Despite our growing size, we foster a small company culture where people work across a variety of projects" Peter Bell

"We moved into the area of missile scoring – developing radars that could be used by the military to pinpoint the trajectory of a missile fired at Mach 2 at a drone target plane. Then about five years ago we began looking at radars for use in cars, either as a parking aid or a hazard warning, and we've also developed a radar for use at pedestrian crossings to improve traffic flow."

The innovations don't stop there; the team is on the verge of launching its second-generation through-the-wall radar which provides a portable means for security forces to survey potential hostage or siege situations where people may be trapped inside buildings. With this groundbreaking product already in use by one European police force, and a potentially huge international market yet to be exploited, it's no wonder that Cambridge Consultants is looking to work ever more globally.

"Last year half of our business came from the US, and our new office in Boston is a direct result of our success in this market," says Neil. "Now we're looking at how we can export our brand and approach into other markets, using local talent to address needs and find solutions in the same multidisciplinary way that we do here."

Nevertheless, despite its growing international presence, Cambridge Science Park remains at the heart of the company's long-term plans.

"We're looking at how we can export our brand and approach into other markets" Neil Cooper

"Being here is ideal for us," explains Peter. "Not only is it somewhere that is recognised internationally, but it also means that we see the next generation of start-ups setting up right on our doorstep – perhaps we might be able to help them get their product to market quicker or develop the missing piece of technology they need.



"That's the beauty of our business – you never know exactly where the technology will lead you!"

www.cambridgeconsultants.com

Above: the Prism 200, the second-generation throughthe-wall radar system developed by Cambridge Consultants **Right:** a holographic image of the Queen's head, produced by Smart Holograms

Award-winning success from A to X

CSP companies receive Queen's Award for Enterprise

Two Cambridge Science Park companies have won the prestigious Queen's Award for Enterprise in 2005 – widely regarded as the premier award for business performance in the country.

Abcam and Xaar were two of only 135 award-winners this year. The awards are announced in April each year on the Queen's birthday, in recognition of outstanding achievement by UK-based industry.

Abcam Limited, which produces and supplies antibodies and related reagents for use in bioscience research, won an award in the International Trade category. In October 2005, Abcam achieved a share placing of £15.25 million ahead of the company's admission to the AIM market of the London Stock Exchange. Via its innovative online platform, the company quadrupled its year-on-year growth in overseas sales between 2002 and 2004, with the result that 84% of sales during these three years came from overseas customers.

"The biggest challenge for us has been being able to scale the business while still retaining the efficiency," said Managing Director Jim Warwick. "We've grown from a company that shipped out one or two orders a day to dealing with something like 150–200 orders per day."

Xaar plc, established in 1990, won an award in the Innovation category for its development of printers and related products. Through the exploitation of its patented inkjet technology based on the piezo-electric effect (the precise firing of minute droplets of liquid), the company produces printheads which are more durable and versatile than alternatives. Xaar printheads are now used widely in the printing of large posters, printing on three-dimensional objects and on packages.

"This award is a tribute to the efforts and pioneering work of all the staff at Xaar" Ian Dinwoodie, CEO

CEO lan Dinwoodie commented: "The Queen's Award is a tribute to all the staff at Xaar whose efforts and pioneering work have contributed to both the technical and commercial success of our inkjet technology.

"Our piezo-electric inkjet technologies have come a long way in recent years and are now recognised as a mainstream printing technology. Xaar has been able to translate this into strong and profitable growth." The Queen's Awards for Enterprise (for businesses) differ from personal honours because they recognise the achievement of the successful business unit as a whole – management and employees working as a team. Businesses can apply for The Queen's Award for Enterprise in one or more of three categories: International Trade, Innovation and Sustainable Development.

Awards are held for a period of five years from the date of announcement, during which time the winners are entitled to fly the Award flag and to display the emblem on their letter headings, in advertising, and on packaging of goods or the goods themselves.

Abcam and Xaar join a prestigious group of award-winning companies which also includes former tenants Cambridge Silicon Radio, who won in the International Trade category while based on Cambridge Science Park in 2003. CSR are moving back onto the park in December 2005. The East of England as a whole featured prominently in this year's awards, with 24 companies across the region achieving recognition in different categories.

For more details on the Awards and how to enter, visit: www.queensawards.org.uk.

Injection-free insulin

CSP technology leads to a revolutionary treatment for diabetes



The lives of 17 million diabetes patients in the US and potentially many more worldwide could be transformed following the recent approval by the Expert Committee of the Federal Drug Authority (FDA) of an insulin-delivery system based on technology developed on Cambridge Science Park more than 15 years ago. Catalyst talked to Dr Felix Franks, founder and director of former tenant Pafra Biopreservation, about the long road to success.

"It's an inhaler-based system which means that diabetes patients no longer need to carry out painful injections to regulate their blood sugar level," says Dr Franks of the revolutionary Exubera® technology developed to this commercial stage by US-based Nektar Therapeutics in collaboration with pharmaceutical giants Pfizer.

"They also don't need to refrigerate their insulin because it comes in dry powder form – this could be of particular value in developing countries, where access to refrigeration is more limited."

The landmark decision came in September 2005 when the FDA Committee recommended the registration of the technology, marking the culmination of years of research, clinical trials and legal process.

"We applied for the patent back in 1989 and licensed the technology to Inhale Therapeutics – now Nektar Therapeutics – in 1991," continues Dr Franks. "There has been a long period of research and development and we've also had to fight various legal battles with a number of major pharmaceutical companies, which has stretched out the process.

"Clinical trials began in 1998, at which point Pfizer became a partner in the project to provide the marketing and development resources that only a major company could. There are other companies competing to provide a similar sort of product, but those who know estimate that they're at least two years behind us, so the decision of the FDA Committee is a really important milestone – if finally approved, it will be the first inhalerbased product widely available on the market."

"In the early 80s, spin-outs and start-ups were not really a part of the way the University worked" Dr Felix Franks

It is also a personal triumph for Dr Franks following a 40-year career whose highlights have included serving in the British Reconnaissance Corps during the Second World War, a NASA research Fellowship at the University of Pittsburgh, a professorial chair at the Department of Plant Sciences at the University of Cambridge, a 17-year stint as a Bye-Fellow of Girton College and life membership of Clare Hall.

In 1985 he founded Pafra Biopreservation on Cambridge Science Park, a company developing freeze-drying process technology to the pharmaceutical industry. But despite eventually counting 18 of the 20 largest pharmaceutical organisations in the world as clients, Dr Franks faced an initial challenge to start an enterprise without the extensive technology-transfer infrastructure that exists for new ventures today.

"Back in the early 80s, spin-outs and start-ups were unusual and not really a part of the way the University worked," he explains. "I was working at the Department of Plant Sciences when I saw the potential for setting up a company in my field, so I went to the University Old Schools to find out about support for filing patents and setting up a commercial enterprise – there was none!

"Then I talked to Trinity College who were a huge help both in starting up on Cambridge Science Park and also throughout our 13-year tenancy. I think there is more general assistance available now, but their support was invaluable in those early days of technology transfer."

Now living in North London and looking to celebrate his 80th birthday next year, Dr Franks is still working extremely hard. As well as providing consultancy work for Nektar Therapeutics, he is both founder and managing director of the BioUpdate Foundation, a nonprofit organisation that provides postexperience training courses for the pharmaceutical and bioindustries and to lawyers active in biotechnology intellectual property.

Nevertheless, having retained equity in the soon-to-be-released Exubera® insulin delivery system, Dr Franks is entitled to look forward to the belated fruits of his expertise, hard work and patience – perhaps almost as much as diabetes patients worldwide look forward to using the insulin inhaler which he has helped to develop.

www.nektar.com www.bioup.com

Above left: Dr Felix Franks Below: the Nektar Pulmonary Inhaler system and Exubera® capsules containing rapid-acting, dry-powder insulin



From ideas to enterprise

Below: multi-nozzle inkjet printer of the type used by Plastic Logic, a start-up from Cambridge University



Spin-outs and start-ups from Cambridge University have been at the heart of the Cambridge phenomenon since it started, including a long list of past and present tenants at Cambridge Science Park. Catalyst spoke to Dr Anne Dobrée, Interim Director of Cambridge Enterprise, the University's newly amalgamated technology transfer office, about their role in continuing this tradition.

"Cambridge University is a world-beater," explains Anne at Cambridge Enterprise, "but it's obvious that groundbreaking ideas and concepts alone don't necessarily result in commercial success. So we're here to help inventors, innovators and entrepreneurs in the hi-tech sector at the University of Cambridge tum their ideas into successful business realities for the benefit of everyone involved – themselves, society, the UK economy, and of course the University itself."

A large range of successful businesses has originated from the University of Cambridge and found a fertile breeding ground for success at Cambridge Science Park, including Abcam, Alphamosaic (recently acquired by Broadcom), Cambridge Photonics, Enecsys, Purely Proteins and Smart Holograms.

The Park is building on its reputation as a site for hi-tech spin-outs and start-ups from the University of Cambridge by forging even stronger links with Cambridge Enterprise. Represented at events such as the recent Cambridge Enterprise Conference (13–15 September 2005), Cambridge Science Park also acts as a hub for the most promising new University ventures by providing start-up space as one of the prizes for the 50K Business Plan competition.

Cambridge Enterprise itself is the new face of some long-standing University technology transfer services. Formed in July 2003, it brings together three separate technology commercialisation units: the Technology Transfer Office, the University Challenge Fund and the Business Creation team from the former Cambridge Entrepreneurship Centre.

"The creation of Cambridge Enterprise means there's now just one door for parties interested in technology transfer to knock on" Dr Anne Dobrée

These activities cover the full range of support and advice to help turn bright ideas into successful commercial realities. Via Cambridge Enterprise, budding entrepreneurs and inventors can find out about incubator space, get advice on the practicalities of starting a business, and access a variety of networking and mentoring opportunities.

"Previously there was a potentially confusing situation for University members interested in commercialising their ideas," explains Anne. "The creation of Cambridge Enterprise means there's now just one door for interested parties to knock on – both internally and externally – and it also means we can coordinate our activities much more effectively." The challenges of technology transfer are diverse, but Anne rejects the conventional view that Europe lags a long way behind the US in the successful commercialisation of knowledge-based enterprises.

"It's often overlooked when comparing the US to Europe that we have two very different market environments," she says. "In the US, there is a single, large and unified market for new companies to target; here in Europe, despite the European Union, the market is much more fragmented, with different cultures, languages and products. As a result, access to the same size of market is not available to many new spin-outs and start-ups in the same way as it is across the Atlantic."

The differences between the two markets are clear. The US population is currently around 295 million, with a GDP of \$11.75 trillion, whereas the UK has a population of 60 million and a GDP of \$1.75 trillion. Only one agency's approval is required in order to get a drug registered in the US, compared to around 27 agencies in Europe.

"It's obvious that the clustering of talent, enterprise and expertise at Cambridge Science Park has been an important factor in the success of many businesses that have evolved through the University," says Anne. "We're always interested in developing our links with the many companies based on the Park, drawing on their experience to help the next generation of new ventures flourish.

"And of course, we're a channel for some of the most exciting and innovative ideas around – it's something this University is famous for and will continue to be for many years to come."

www.enterprise.cam.ac.uk

A meeting of minds

The cluster effect in action in Cambridge and on CSP

New research from the University of Cambridge pinpoints how the city's hi-tech commercial success story of the last 20 years has stemmed from the vision, drive and daring of a small group of entrepreneurs, the networks they have created and the companies they have helped to launch – many of which have established and thrived on Cambridge Science Park (CSP).

Dr Hermann Hauser, Dr David Cleevely, Sir Chris Evans, Professor Chris Lowe, Professor Andy Hopper and Dr Gordon Edge – it's a set of names familiar to anyone who has taken an interest in Cambridge's thriving hitech sector in recent decades. Now the huge influence of these and other key figures has been charted, analysed and even illustrated in a set of 'family trees' as part of exciting new research published recently by the Centre for Entrepreneurial Learning (CfEL) at Cambridge University.

"The research is unique because it uses the individual as the unit of analysis as opposed to looking at business units, which tell you nothing about the spirit of enterprise," said Dr Shai Vyakamam, Director of CfEL and one of the three report authors. "We can see the impact a surprisingly small number of individuals have had in the amazing growth of our hi-tech sector.

"The message for policy-makers is that, to make enterprise thrive in this country, we need to encourage it at the grass roots level. We need to look at and nurture this role of the 'individual in enterprise' if this kind of proliferation is to expand and continue."

"Cambridge is the best example of the networking opportunities that are the key to the success of business clusters" Dr David Cleevely

The research paper, subtitled The Effect of Social Capital in New Venture Creation and the Cluster Growth Process, was launched at an event held at Churchill College on 13 September which brought together luminaries from the business, academic and scientific communities as a preliminary event to the Cambridge Enterprise Conference. Dr David Cleevely, serial entrepreneur and founder of Cambridge-based telecoms consultancy Analysys, spoke at the event of the qualities which has made the Cambridge cluster so unique.

"Many business clusters are simply a number of individual businesses operating independantly from each other and mistakenly believing that physical proximity to other organisations is in itself enough to guarantee success," he said.

"The reality is that it's the networking opportunities that this proximity presents that deliver the real key to the success of a business cluster, and Cambridge is perhaps the best example of it anywhere."

The hugely influential role of individuals and companies based on Cambridge Science Park is a recurring theme throughout the research, with one of three 'family tree' diagrams focusing specifically on the legacy of Cambridge Consultants – the Park's secondlongest-serving tenants – to the local hi-tech environment. The paper also highlights the large number of CSP tenants who are linked by key individuals holding multiple directorships in companies including Akubio, Astex Therapeutics, Domantis, Ionix Pharmaceuticals, Kudos Pharmaceuticals, Lorantis, Purely Proteins, Paradigm Therapeutics, Plastic Logic and Xaar.

"A small number of entrepreneurs have been invaluable in creating the entrepreneurial spirit that has been so much in evidence on Cambridge Science Park and around Cambridge as a whole," added Dr Vyakamam.

"They've offered crucial advice to new entrepreneurs, helped steer new ventures to profitability and success by serving on their boards, identified promising opportunities and helped to secure angel investment."

www.entrepreneurs.jims.cam.ac.uk

Below: detail from a map demonstrating links between entrepreneurs and companies as a feature of the Cambridge hi-tech cluster, reproduced by kind permission of the Centre for Entrepreneurial Learning, © 2005



PARKLIFE

Venture capital visit from Shanghai

A delegation from the Shanghai Venture Capital Association visited Cambridge Science Park on 29 September to learn about its success as a centre for hi-tech development. The delegation went on to visit longstanding tenants 3i who have just opened an office in Shanghai.

The Shanghai delegation, led by Executive Vice Secretary General Chen Jian Ping, was invited by Martin Bloom, who is an advisor to the World Economic Forum on UK/China trade relations. Tenants interested in finding out more about the Shanghai Venture Capital Association should email Juliette Morgan of Bidwells Property Consultants at jmorgan@bidwells. co.uk.



Above: the delegation from the Shanghai Venture Capital Association at the Trinity Centre

Double award success for Plastic Logic



Plastic Logic was named as 'Start-Up of the Year' at Elektra 05 – the European Electronic Industry Awards – at a ceremony in London in September which brought together 700 executives from across Europe.

Hermann Hauser, a lead investor in Plastic Logic and founder of Amadeus Capital Partners, was also honoured with a Lifetime Achievement Award for his work as a venture capitalist and entrepreneur. Accepting his award, Dr Hauser said: "I always remember the advice given to Dustin Hoffman in The Graduate: the future was in plastics and that it was to become a really important industry. And that's what we are building at Plastic Logic."

From left to right: Natasha Kaplinsky (TV personality and host of the evening) presents the award to Stuart Evans (CEO, Plastic Logic) alongside Thomas Kuschel (Toshiba, sponsor of the Start-Up of the Year Award) and Richard z (Editor of *Electronics Weekly*)

Polatis announces US merger



Polatis Ltd, makers of high-performance optical switch subsystems and module products, has merged with US-based Continuum Photonics, Inc, in a deal announced on 26 September.

The companies will combine their technology, product lines and personnel to create a single business called Polatis Inc, which is dedicated to providing customers with a full range of industry-leading optical switch component and system products for the telecommunications, test and measurement, data networking and defence markets.

PARKLIFE connections

The Science Park HR Group, a support network for HR managers/representatives, provides a forum for sharing of common issues/problems, discussion of best practice, updates on legislation, and the opportunity to offer support to each other in what can often be a solitary role. They meet every other month over lunch. Contact: Wendy Hepburn Email: whepburn@xaar.co.uk

A Facilities Managers' Forum is an opportunity for representatives from CSP companies to meet once a month over lunch to share experiences, facilitate networking and discuss issues of common interest in this field.

Contact: Andrew Taylor Tel: 01223 702500 Email: facility.forum@ntlworld.com

Biology in Business (BiB) is a Park- and University-wide organisation focusing on career development and the exploitation of novel technologies applicable to the life sciences. BiB organises formal and informal events, including the region's only careers fair for life scientists (CoiLS).

Contact: Charles Bailey Email: cbailey@cantab.net

The 4Bio Network is an informal network focused on commercial management issues for Cambridge Science Park companies involved in the biotechnology, pharmaceuticals and life science sectors. Meetings take place every two months, usually on the first Wednesday of the relevant month at 5pm at the Trinity Centre. Contact: Charles Bailey, Nigel Low Email: nlow@ionixpharma.com charles.bailey@mundipharma.co.uk

The Eastern Region Biotechnology Initiative (ERBI) offers members substantial discounts on supplies through its Purchasing Consortium. Membership also gives access to ERBI's special interest groups that include human resources, finance and business development. Contact: Jeanette Walker Email: jeanettewalker@erbi.co.uk.

Web: www.erbi.co.uk

Cambridge AWiSE (Association for Women in Science and Engineering)

AWiSE is a multidisciplinary membership organisation composed of individuals, businesses, associations, institutions and other organisations, all of whom share the common goal of advancing the interests of women in science, engineering and technology. The Cambridge branch holds regular meetings and events; for details see the website or get in touch. Contact: Dr Jenny Koenig Email: jk111@cam.ac.uk

Web: www.awise.org

The European Chapter of the Lab Robotics Interest

Group is a forum for the exchange of ideas on robotics and programmable automation in the field of high-throughput screening, assay development, proteomics, genomics and general lab automation. Regular meetings bring together scientists, engineers, users and vendors of equipment and instruments. Web: www.lab-robotics.org

Enterprise Link, a Business Link service for Cambridgeshire, is a membership network providing advice and support for earlystage, entrepreneurial/aspirational businesses. It holds a variety of networking events and seminars at the St John's Innovation Centre in Cambridge, and also sends out regular bulletins to members with information, advice and opportunities. It can also arrange access to sector specialists.

Web: www.enterprise-link.co.uk

Gauntlet

Gauntlet is a new web-based service which gives budding entrepreneurs practical feedback on the potential of their ideas and highlights elements of their business proposition that they need to work on prior to that critical first meeting with an investor. The scheme, which has been developed by the London School of Economics and Library House and is supported by EEDA, is available to users for a licence fee of \pounds 199.

Contact: Marcie Bell (EEDA) Tel: 01223 484689 Web: www.runningthegauntlet.co.uk Email: runningthegauntlet@eeda.org.uk

The Cambridge Science Park is managed by Bidwells on behalf of Trinity College.

Catalyst is a forum for companies on the Cambridge Science Park.

The next issue will be published in Spring 2006. If you have any comments or suggestions for stories to be included in the next issue, please get in touch with Julie Bushell or Sherri Brazear (see right).



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Shai Vyakarnam - Director, Centre for Entrepreneurial Learning

At the heart of our philosophy at the Centre for Entrepreneurial Learning, we believe in the power of individuals to realise their full potential. If you don't start with the premise that people really can achieve what they set out to do, then you're on a hiding to nothing from thereon in!

Of course there are other factors at play: capability, infrastructure and environment, a marketplace, investment, to name just a few. But our research has also shown us that all these different elements count for little if you don't have the right social networks in place – the right contacts to open doors, share knowledge and experience, or provide guidance.

We have been researching the Cambridge phenomenon and we've seen that this is how a lot of Cambridge's success can be explained. Much of the real capital – or value – is in the social network, which works on two levels.

One level is via an interconnected group of people who sometimes do business together or invest in each other's companies. Secondly, and perhaps even more importantly, they meet socially on a regular basis, as a result of which they have an enormous amount of information that flows back and forth in trusting environments.

At the Centre for Entrepreneurial Learning,

Viewpoint

Director of the Centre for Entrepreneurial Learning, University of Cambridge

we've been looking at ways we can help nurture this already very powerful social capital we have in and around Cambridge. Our flagship event is called Enterprise Tuesday, which takes place every Tuesday evening during the University term.

It's a very popular evening which brings students together with people from industry, academics and postgraduates. With talks by leading industry figures, the primary aim is to introduce participants to the world of business, as well as to encourage and inspire individuals to pursue their entrepreneurial ambition.

It's also a great chance for the local hi-tech community to network with people from both inside and outside the University who share their passion for enterprise – we'd certainly be interested in hearing from any companies who'd like to attend and even talk at one of our events.

"We've got it right at this level; the question is, can we get it right at the next level?"

There are plenty of other ways in which Cambridge Science Park companies could tap into the vast resource of talent that exists at the University of Cambridge. Our MBA students at the Judge Business School are always looking for companies to work with on projects as part of their coursework. We have such a range of talented young individuals here who would love to get involved with exciting companies such as those on Cambridge Science Park, I think the outcome would be really positive for everyone involved.

In terms of the broader picture, I think the agenda now is about scaling up. We've got it right at this level; the question is, can we get it right at the next level? Cambridge sometimes gets compared to Stanford or to Silicon Valley, but there's still not the critical mass of big companies that have been created out of our hi-tech cluster.

We need to think bigger about some of the things we're doing. So rather than having an endless stream of pilot projects and small ideas, we should start thinking about how we can get more volume and a better quality of start-ups, and more companies growing bigger.

We've got a huge number of small companies; it would be nice to have a few more big companies around. Of those Cambridge companies that really have taken it to the next level, one of the things you'll often find is that they still have much of the original management team in place.

Of course that's not the business model for every type of company, but it's worth considering that those really looking to make a big impact on the global scene are those who are in it for the long haul – rather than just looking to be acquired within six or seven years. Developing these larger companies as a part of our home-grown hi-tech scene is crucial if our cluster is to evolve successfully into the next phase of its development.