

The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning <u>www.isis-innovation.com/</u>... are automatically redirected to our new domain, <u>www.innovation.ox.ac.uk/</u>...

Phone numbers and email addresses for individual members of staff are unchanged

Email : enquiries@innovation.ox.ac.uk







>> 12 MONTHS : WORKING WITH OXFORD UNIVERSITY TO DELIVER IMPACT

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Chairman	Mr Nigel Keen *	
Managing Director	Mr Tom Hockaday	
Executive Director	Mrs Linda Naylor **	
Non-Executive Directors	Professor Sir John Bell	Regius Professor of Medicine, University of Oxford
	Dr Tim Cook***	Non-Executive Director
	Professor Steve Davies	Professor of Chemistry, University of Oxford
	Mrs Ann Hacker	Non-Executive Director
	Mr Giles Kerr	Finance Director, University of Oxford
	Professor Ewan McKendrick	Registrar, University of Oxford
	Professor Lionel Tarassenko	Head, Department of Engineering Science, University of Oxford
	Professor Ian Walmsley	Pro-Vice-Chancellor (Research, Academic Services and
		University Collections)

* Mr Nigel Keen succeeded Mr Bernard Taylor as Chairman of the Board in December 2013. Mr Taylor retired from the Board after sixteen years' service in December 2013.

** Mrs Linda Naylor was appointed as Executive Director in May 2014, having joined Isis in 2002.

*** Dr Tim Cook resigned from the Board after 18 years' service, including 9 years as Managing Director of Isis, in June 2014.

www.isis-innovation.com

>> Chairman's Introduction

This year we celebrated the 25th anniversary of the formation of Isis in 1988. Highlights during the year included a record number of new technology transfer disclosures and consulting enquiries from Oxford researchers, and seeing a substantial return to the University from the sale of Natural Motion, an Isis spin-out from 2001, sold for \$527m.



Isis Innovation Ltd is a growing and successful company wholly owned by the University of Oxford. We create impact for the University, the region, and society by supporting researchers in the University and by building links

between University research and industry. We share this expertise around the world.

I was appointed Chairman of Isis in December 2013 and feel privileged to be part of the vibrant technology creation infrastructure of the University. My predecessor, Bernard Taylor, retired from the Isis board in December 2013 and my colleagues at Isis and I would like to thank him for the work that he has put in over the past sixteen years to build Isis to the organisation it is today.

Isis plays its part in the development of the local high technology cluster in Oxfordshire through its support of the commercialisation of research and technology from the University. The international reach of Isis, with offices in Oxford, Madrid, Hong Kong and Kyoto, attracts investment from around the world into Oxford science and technology.

Working collaboratively, Isis contributes to the impact of the University as well as delivering financial returns to the University as its sole shareholder. By transferring the outputs of early stage research from the University, Isis enables novel ideas to become new products which address challenges in sectors including healthcare, the environment and communications. Translating great science into useful technology and then providing channels to take that technology to market is increasingly important to the University, to research funders, to governments and the economy as a whole. As curator of the University's intellectual property base, we provide financial returns to the University through the distribution of royalty income, by securing the University's ownership of intellectual property assets and its shareholdings in spin-out companies. We also support research funding from translational awards and help to enable research funding into the University from its spinout companies and licensees.

Isis revenues have now grown at a rate of 20% per annum for ten years (CAGR), demonstrating Isis' effectiveness in making an impact, and reflecting the value that industry and society puts on good outcomes from the science base. This growth delivers a positive return on investment to the University each year. The University provided Isis with £3.1m during the year which Isis invested in protecting the intellectual property arising from the University's research activities to give a platform for future commercial exploitation. The financial returns to the University from the exploitation of the substantial base of the intellectual assets which have been built over the past years have this year allowed Isis to return £6.7m to the University and its researchers, created shareholdings for the University in eight new spin-out companies worth £5m, and supported Oxford researchers winning £19m of translational research funding. These results allow the University to make technology transfer self-funding and to reward the researchers and the University Departments in which they work.

I am delighted to see the progress that Isis has made throughout the year and I would like to thank all the Isis staff and those who work with them in the University for their commitment which has made the year successful.

>> Transferring Oxford Technology

Isis completed 105 licensing deals transferring technology to industry in 2014 (2013:98)



Isis delivered another very strong performance throughout the year to 2014, transferring new technologies and expertise to industry and society, demonstrating the impact of the University of Oxford and its researchers. Our performance can be told through stories and numbers. The following pages highlight our achievements over the year. Page 18 shows the numerical highlights of the year, which have been a feature of our Annual Reports since 2006, and page 16 the financial performance. The significant long

term economic impact of Isis' activities was summarised in an external report, detailed on page 15. The progress of technologies that Isis has licensed, to new and existing companies, is contributing towards a safer and healthier society.

TOM HOCKADAY | MANAGING DIRECTOR



In April, Oxitec, an Isis spin-out company using IP licensed from Oxford University, achieved a dramatic reduction in Dengue mosquito numbers in Mandacaru, a village in the northern state of Bahia, after the company introduced genetically engineered insects into the region. The insect control company, spun-out by Isis in 2002, recorded a 96% reduction of the wild mosquito population in the target area after only six months. This level of suppression was maintained for a further seven months using continued releases, at reduced rates, to avoid re-infestation.

Scientists from Oxitec and their partners in Brazil – Moscamed and the University of São Paulo – are collaborating to carry out field demonstrations of Oxitec's technology against the dengue mosquito 'Aedes aegypti'.

>> Unique Academic Consultants

Oxford University Consulting (OUC) signed 398 consulting agreements with 259 clients and deployed 356 Oxford academic consultants (2013: 297, 214, 218)

Business development activity is an investment in time that often sees a return at a later date. In May, OUC worked on two potential consultancy opportunities that were to bear fruit later in the year with the signing of agreements enabling academics from the Departments of Engineering and Education to bring their unique expertise to bear on the challenges faced by two very different organisations. innovative R&D in conjunction with academic consultants such as Professor Newman, it improves safety and optimises the discovery and development of natural resources worldwide.

Expertise from the University's Department of Education was deployed through OUC's agreement with the Institute for Learning (IfL), the independent, member-led professional body for individual teachers, trainers, tutors, assessors



Professor Paul Newman, who leads the Oxford Mobile Robotics Group, spent a week in the Omani desert assisting geoscience company CGG, applying his mobile robotics expertise to the challenge of ensuring safe and precise data collection in hostile environments.

CGG is a fully integrated geoscience company providing leading geological, geophysical and reservoir capabilities to its customers, primarily from the oil and gas industry. By applying and other professionals working in the further education and skills sector. This consultancy saw a team from the department's centre on Skills, Knowledge and Organisational Performance (SKOPE) support the IfL to deliver a course for practising FE teachers and lecturers. The course objectives were to develop the participants' abilities and confidence to undertake research projects, and their understanding of how best to apply this research in practice.

>> A Platform for Technology

Technology Showcase 2013 : exhibiting and presenting outstanding technologies

In June Isis, supported by the University, held its first Technology Showcase, 'Innovation with Impact'.

Over 200 people visited the Saïd Business School to hear a welcome from Professor Ian Walmsley, the Pro Vice Chancellor for Research, a keynote address from Professor Robert Winston and 24 presentations covering technologies in physical and life science streams. We welcomed partners from other universities to the event, including a presentation detailing a new treatment for pre-eclampsia from Aston University, for whom Isis Enterprise delivered a Technology Transfer Partnership contract.

Presentation sessions provided a snapshot of the variety and depth of technology available from Oxford, and our session chairs-all industry experts-provided some interesting and thought



An exhibition of projects and technologies allowed visitors to meet the researchers behind them and to find out more information. The exhibits ranged from Oxford Mobile Robotics Group's autonomous ('self driving') vehicle to a Chilli Sensor for measuring the spiciness of chillibased sauces. provoking comments to end the sessions.

We continue to seek new ways to present the fruits of University research to a wider audience, and were encouraged to organise this event by the evident interest expressed in a stakeholder survey in 2012.

>> Accelerating Impact

21 projects in the Isis Software Incubator, March 2014 (18, March 2013)

The Isis Software Incubator has been supporting entrepreneur-led software ventures since 2010, and in July we ran the Accelerator programme for the second year running.

Five entrepreneurial teams entered the eight week programme – committing to participate actively over the period and receiving support in the form of office space, facilities, mentoring and finance. These included two companies mining a race from London to Ulaanbaatar in cars costing under £500.

Tip Tapped (tiptapped.com) collects sports predictions made on Twitter, analyses the success and accuracy of each forecaster, and allows users to visualise predictions. This technology, which has potential applications in many other spheres, saw Tip Tapped accepted onto the UKTI-run Sirius programme. The Isis Software Incubator has now



social media – Esplorio, offering an automated trip diary, and Tip Tapped, providing insight into sports performance.

Esplorio (http://home.esplor.io/) featured on TheNextWeb.com, and has rapidly built up a dedicated following. Users of Esplorio's service have visited over 120 countries and 2.06 million places worldwide. Between them they have catalogued everything from Antarctic expeditions to their family holidays to the Mongol Rallyentered three companies into this programme, with a 100% acceptance rate.

The Incubator continues to add services with cloud hosting from Nephoscale and Amazon, and satellite facilities in a shared workspace with London City University, at the heart of Tech-City.

The Summer Accelerator programme is now a well-established and successful event in the calendar, and continues in 2014.

>> Global Reach

Isis Enterprise – 85 new consulting deals signed with clients (2013:66), and our second joint venture in China established

Isis Enterprise provides innovation management consultancy throughout the world. In August, we announced the formation of Guangxi Liuzhou JinHui International Science and Technology Co Ltd ("JinHui"), our second mainland China joint venture company.

Typically our joint ventures are collaborations between Isis, government agencies, local investors, business associations and international partners.

Malta, delivering business incubation training and consultancy support.

We are undertaking a scouting project with Philips to support their Open Innovation activities identifying IP assets and investment opportunities internationally, as well as identifying relevant research groups globally.

Our consultants also assist non-UK based



During the last 12 months our network of collaborations in mainland China has expanded in the East (Changzhou, Yixing, Suzhuo), South (Foshan, Shenzhen, Guangzhou, Dongyuan), South-West (Liuzhou) and North (Qingdao, Beijing) of China.

Isis Enterprise consultants provided innovation management training with the Committee for Economic Development of Australia (CEDA), and helped to identify research collaborators for a major Japanese multinational company. We continued our work for the University of companies – for example by assisting Spanish company, Torus Software Solutions, in its winning application to the UKTI Spain Technology Competition which was aimed at helping Spanish businesses expand into the UK. Torus

was commended for a clear strategy on how to succeed in the UK market, and globally attributed by the judges to a strong business plan which Isis helped Torus create.



>> 25 Years Later

1500 patent applications for Oxford researchers, and 101 companies formed in 25 years

In September, we celebrated the 25th Anniversary of the formation of Isis Innovation Ltd in 1988. Isis was established by the University "to ensure that the results of research, having been adequately protected by way of patents, bring reward to the University and the inventors."

The scope of Isis' activities has grown during this time to maximise opportunities for university research to create impact in wider society, engagements for Social Sciences and Humanities. Isis' work with University colleagues also includes such activities as support of the REF submission with data and impact stories.

Professor Andrew Hamilton, Vice-Chancellor of the University of Oxford, said "The University of Oxford, like all universities, thrives when it engages with society. Academic freedom to generate and develop new thinking drives



particularly through consultancy and services managed by Oxford University Consulting and innovation expertise offered by Isis Enterprise.

Since 1988, Isis has filed 1500 new patent applications on Oxford inventions, concluded 750 technology licence agreements, and created more than 100 new start-up and spin-out companies. During this time Isis has assisted all University Divisions to commercialise IP, notably through licensing and spin-outs for MPLS and Medical Sciences, and facilitating consultancy progress, and tangible benefits from research are made accessible through commercialisation. Isis has been at the heart of this activity for Oxford for 25 years and its contribution to the University is highly valued and appreciated."

Isis continues to grow, to ensure that discoveries and inventions made by University researchers are exploited and disseminated for the benefit of society, and to contribute to sustainable economic growth locally, nationally, and internationally.

>> Fast Forward for SMEs

Winning awards: Isis and our spin-out companies

Isis entered the Fast Forward Competition run by the UK Intellectual Property Office in October. We were one of nine national winners, and were awarded £77K for innovative approaches to Knowledge Exchange practices with clear links to Intellectual Property and technology transfer development and uptake.

The award, our first from this annual competition, is being used to accelerate uptake of IP by SMEs

future income through a reinvestment model which sustains the SSIPS fund.

We congratulate our spin-outs, start-ups and inventors whose work has been recognised this year. These include Brainomix, introducing a pioneering stroke assessment system, awarded over £900,000 from the TSB; OxSonics, awarded £2.1m also from the TSB; Kepler Energy, developing tidal turbines to harness low



Isis staff receiving the UK IPO Fast Forward award

through the Oxford Isis SME Smart IP Scheme (SSIPS). This seeks to address SMEs' key constraints of resource (time, capacity, expertise, and finance) and investment risk.

The resource issue is addressed by sharing costs (particularly IP management capacity and expertise), offsetting these against potential

velocity currents, which won a £30,000 Shell Springboard Award; Oxford Gene Technology and OrganOx – both Isis spin-outs and winners of awards from the OBN; and Dr Luke Alphey, developing genetic control of insect pests in spin-out Oxitec, who was named BBSRC Innovator of the Year.

>> Inside Oxford

More than 300 events promoting innovation and entrepreneurship to our University colleagues

In November, working with the Oxford Learning Institute, we ran a seminar for Principal Investigators (PIs)-'Making the most of your expertise and IP'. The seminar is delivered periodically in order to build strong relationships with researchers, increase their understanding of IP, consultancy opportunities and commercialisation of research.

In addition to the large seminars and training

also for the Medical Sciences and MPLS divisional skills training groups with a focus on IP and spin-outs, which were very popular.

We conducted a survey of researchers and support staff involved in research across the University, planned and deployed with the help of University staff. Support for technology transfer from the respondents was high, at 89%, with awareness of Isis and its activities also high, at



sessions, we continued our weekly drop-in sessions in several departments, including Chemistry, Engineering, Physics, Pathology and the Weatherall Institute of Molecular Medicine.

These drop-ins provide a contact point at which researchers can talk to Isis staff within their own departments. We developed specialised workshops for the Chemistry department and 92% overall and 98% for researchers.

We continue to seek ever-closer links within the University and have established Isis "spokes", or hot-desks, in a number of locations. The spoke model is now being used to make contact easier and more frequent in support of our mission to provide a first class service to academics and researchers.

>> Networks for Engagement

Open innovation, investment opportunities and support for researchers

The 73rd meeting and dinner of the Oxford Innovation Society (OIS) was held in December. The OIS is our open innovation organisation that brings together industry, academia, policy makers, and business people to encourage the uptake of new technologies from Oxford. Addressing the theme, "Meeting the Energy Challenge" were speakers Professor Sir Chris Llewellyn-Smith, Catherine Bottrill and Jim Donaldson. During the year, members received at each meeting achieved a direct positive outcome following their pitches. We now have more than 200 registered IAN members, who receive details of investment opportunities as they appear in the Isis pipeline.

Six projects from the University were also supported by the seed and donation funds (UCSF and OIF respectively), which were boosted by the return from the NaturalMotion exit



exclusive early access to 48 new technologies available for licensing.

The Isis Angels Network (IAN) met twice during the year, in April and October. IAN meetings are focal points for investors to meet and evaluate potential spin-outs; two of the four presenters (page 14). An external funds manager, Parkwalk Advisors, launched the first University of Oxford Isis Fund to allow individuals to invest in earlystage ventures that qualify for EIS/SEIS tax relief. This call raised ± 1.35 m – University researchers who wish to apply should contact Isis Innovation, Portfolio Advisor to the fund.









Johnson Hohnson innovation

New members of the OIS

>> Stars of Tomorrow

Nightstar's gene therapy treatment was developed by Professor Robert McLaren

In January, Isis completed the formation of three new Oxford University spin-out companies. One of these, Nightstar, raised the largest first round investment to date for an Isis spin-out, £12m, from Syncona, a subsidiary of the Wellcome Trust.

Nightstar is developing a gene therapy for an inherited form of progressive blindness. The approach has already shown very promising results in a clinical study. As one patient who Oxsonics is the tenth spin-out to be formed under the 2006 deal in which London-based venture capital fund Technikos provided £12m for the University of Oxford's Institute of Biomedical Engineering (IBME).

The third spin-out in January, Oxcept, is developing a secure mobile-to-mobile payment system. Describing it, Wired wrote, "Imagine a piece of software that would allow the soldiers,





underwent treatment said "I was able to see a few stars. I hadn't seen stars for a long, long time."

Also in January, spin-out Oxsonics was established to develop technology harnessing ultrasound devices in combination with ultrasound-sensitive nanoparticles for drug delivery in the treatment of cancer and back pain, focusing initially on liver cancer. aid workers and government officials thrown together after a disaster to quickly and securely communicate with each other whatever device they hold in their hands. Imagine too the same approach used to allow you to pay easily for your coffee on your mobile after entering a simple four digit code."

>> Natural Growth

Financial returns from acquisitions and IPOs

In February, Oxford spin-out company Natural Motion was bought for \$527m, a major exit for shareholders, generating a substantial financial return to the University. Isis set up the company in 2001.

The software games company was spun-out of the Zoology Department and, by the time of its sale, had expanded to around 260 employees, with offices in Oxford, London, Brighton and San Francisco. launch, the University continued to invest in the company's development through Oxford Spin-out Equity Management (OSEM).

Following the acquisition, the substantial return to seed funds managed by Isis is now helping to launch the next generation of spin-outs from Oxford.

Oxford Immunotec, a spin-out from 2002 offering



Torsten Reil, the company's CEO since foundation, was a neural researcher, developing computer simulations of nervous systems based on genetic algorithms.

The Oxford University Challenge Seed Fund provided some initial funding for his new business, and Isis introduced the new company to further investment from business angels, many of them Oxford-based. Following NaturalMotion's diagnostic tests in the field of tuberculosis immunology, completed an IPO that raised \$64m on NASDAQ.

These examples illustrate the potential rewards for investors prepared to follow the development of early-stage technologies over a number of years.

>> Our Impact in Print

"Commercialisation activity undertaken by Isis Innovation contributed more than £0.4 billion GVA to the global economy in 2012/13 and supported almost 5,000 jobs." – *Biggar Economics*

In March, we published a brochure summarising the economic impact of Isis over the years from our work supporting the University of Oxford.

Commercialisation of Oxford research undertaken by Isis Innovation contributed more than £0.4Bn GVA* to the global economy in 2012/13 from spin-out and licensing activity alone, according to a report from Biggar Economics, an independent consultancy. The report found that Isis' Other publications from Isis during the year included our quarterly magazine, Isis Insights, and a range of brochures highlighting examples of Oxford University Consulting's activities with key university departments.

Our online activities grew as followers of Isis on Twitter and LinkedIn reached record numbers, and circulation of our Technology Updates and E-News exceeded 3,000 subscribers.



activities support almost 5,000 jobs globally, of which 3,400 are in the UK and 1,600 in Oxfordshire alone.

Isis made a substantial contribution to the University's submission to the REF**commercialisation of technology, nurturing discoveries from the lab to the market, and providing academic consultancy to external organisations are all tangible outputs realised through Isis. * GVA: Gross Value Added, a measure of the additional value an activity adds to the economy after intermediate consumption (i.e. expenditure

on supplies) has been taken account of.

** REF: Research Excellence Framework, a system for assessing the quality of research in UK higher education institutions.



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>> Accounts 2014

Income

Isis' total income comes from sales turnover of £14.5m and the University subvention of £3.1m. Sales turnover is made up of Technology Transfer licensing income, Oxford University Consulting income, Isis Enterprise consulting income, and Oxford Innovation Society membership subscriptions. Isis receives a subvention from the University of £3.1m per annum for investment into Oxford technology transfer project costs, which is invested in the external costs of patenting inventions made by Oxford researchers. Isis also receives an allocation of the University's Higher Education Innovation Fund award to support Oxford University Consulting and the Isis Software Incubator. These amounts are shown in the accounts in 'Other operating income'.

Expenditure

The University subvention is invested in external patents and other project costs incurred on Oxford technology transfer projects (it does not support Isis staff costs). Administrative expenses are the costs of running Isis, which include our staff costs, marketing and office expenses. Isis distributes the technology transfer licensing income and OUC income to the University and its researchers according to the University's rules; these outgoings are both included in 'Cost of sales' in the accounts.



Income & Expenditure¹

Spin-out company shareholdings

Shares in Oxford University spin-out companies set up by Isis are owned by the University of Oxford, and not by Isis Innovation Ltd. They do not therefore appear in the Isis Innovation Ltd accounts either as assets on the balance sheet or showing income from realisations of shares or the payment of dividends from shares. The total value of the University's shares in its spin-out companies at 31 July 2014 was £49m. Shares in start-up companies which are assisted by the Isis Software Incubator are owned by Isis Innovation Ltd; Isis owns minority shareholdings in these companies valued at a minimal cash cost.

Profit & Loss Account¹

Year to 31 March	2014	2013
	£'000	£'000
Turnover	£14,451	£11,510
Cost of Sales	-£12,553	-£9,781
Gross Profit	£1,898	£1,729
Administrative expenses	-£5,487	-£5,044
Other operating income	£3,615	£3,070
Operating profit / loss	£11	-£245
Other interest receivable	£4	£6
Profit on ordinary activities before gift aid and taxation	£15	£239
Gift aid payable to University of Oxford	£0	£0
Profit / loss on ordinary activities after gift aid donation and before taxation	£15	-£239
Taxation	-£11	£0
Profit / loss on ordinary activities after Gift Aid donation and after taxation	£4	-£239

Balance Sheet¹

Year to 31 March	2014	2013
Accests (fine d 0 comment)	£'000	£'000
Assets (fixed & current)		
Investments	£28	£42
Debtors	£2,467	£2,123
Cash at bank and in hand	£5,034	£1,818
	£7,529	£3,983
Creditors	£6,636	-£3,071
Net assets / liabilities	£893	£912
Capital Funds		
Share capital	£1,750	£1,750
Profit & Loss account	-£857	-£838
Shareholder funds	£893	£912

Isis Innovation Ltd is wholly owned by the University of Oxford. Isis Innovation (Hong Kong) Ltd is a wholly owned subsidiary of Isis Innovation Ltd.

Isis performance from 2000



Notes

1 A full set of accounts is available from Isis Innovation Ltd.

2 Isis distributes these sums to the University and individuals. The University in turn distributes these sums to individuals, Departments, and central accounts according to its standard procedures.

The directors are responsible for the maintenance and integrity of the corporate and financial information included in the company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial information differs from legislation in other jurisdictions.

>> Isis Highlights

Isis is a world leading technology transfer business, creating links between the outstanding research capability at Oxford, and elsewhere, for the benefit of society in the UK and around the world. Isis provides opportunities for business to create sustainable economic growth and for the University of Oxford to demonstrate substantial impact from its research activities.

There are many ways to present the activities of Isis; these are some of the numerical outputs.





Isis Innovation Ltd Annual Report 2014

Isis Innovation Ltd

Address

United Kingdom

Isis Innovation Ltd Ewert House, Ewert Place, Summertown, Oxford OX2 7SG T 01865 280830 F 01865 280831 E innovation@isis.ox.ac.uk www.isis-innovation.com

Japan

Isis Innovation Japan Office ASTEM Building, Kyoto Research Park, 134 Minami-macho, Chudoji-machi, Shimogyo-ku, Kyoto 600-8813 T +81 75 315 8560

Hong Kong

Isis Innovation (Hong Kong) Ltd Level 12, Infinitus Plaza, 199 Des Voeux Road Central, Sheung Wan, Hong Kong SAR T +852 3796 3581 E innovation@isis.ox.ac.uk

Spain

Isis Innovation Spain Office Calle Orense 104C Madrid 28020 Spain T +34 630 816 286

Registered Address Company Number VAT Number University Offices, Wellington Square, Oxford OX1 2JD 2199542 490798885

