OXFORD UNIVERSITY INNOVATION

UNIVERSITY OF OXFORD

Protecting and making the most of your intellectual property

Protecting and making the most of your intellectual property

Welcome to the first in a series of five booklets to introduce Oxford researchers to the ways in which you can commercialise your research. The team at Oxford University Innovation (OUI) have written these for researchers at the University of Oxford to introduce you to research commercialisation.

Here, we explain how you can use patents, copyright and other methods to protect the intellectual property you have created. We describe how OUI work with you to market and commercially develop your work towards licensing.

It is a good idea to be prepared and talk to us at the earliest stage if you think you may have something to patent.

This booklet is one of a series of five Guidelines for Researchers available from OUI and at www.innovation.ox.ac.uk

The other four booklets are:

- Starting a Spinout Company
- Consulting Agreements
- University Proof of Concept & Seed Funds
- Oxford Startup Incubator

We welcome any comments you have on how these guidelines could be more helpful.

Please email us enquiries@innovation.ox.ac.uk

Dr Adam Stoten
Chief Operating Officer
Oxford University Innovation Limited
April 2017

INTRODUCTION

Oxford University's overarching Strategic Plan includes these phrases:

> *"The University of Oxford aims to lead the world in research and education"*
>
> *"We seek to do this in ways which benefit society on a national and a global scale."*

Building on this, the University's Innovation Strategy says:

> *"The University of Oxford is committed to global leadership in knowledge exchange, innovation and entrepreneurship, ensuring our research, scholarship and teaching contribute to the good of the nation and the world.*
>
> *[We aim] "to be a world-leader in research-led innovation and enterprise creation through collaboration with external organisations"*

Our team at Oxford University Innovation (OUI) help staff and students to apply their expertise and research for wider social and economic benefit. Our role is to support Oxford University staff and students to bring the benefits of their research, innovative ideas and expertise to create impact in wider society.

We support Oxford's researchers, staff and students, offering commercial skills and a range of specialist resources in order to maximise research impact through commercialisation. The financial proceeds from commercialisation are distributed according to the University's Regulations and any overall profits are returned to the University for the benefit of future generations.

For updates on innovations from Oxford, follow us on LinkedIn , Twitter or subscribe at www.innovation.ox.ac.uk

HOW CAN WE HELP YOU?

We work with researchers from all areas of the University: social sciences and humanities, medical sciences, mathematics, physical and life sciences.

Researchers who wish to commercialise the outputs of their research are supported by our Licensing & Ventures team:

- We evaluate the commercial potential of your research
- We advise on patenting strategy (if applicable) to fit in with your publication plans, file and pay for patent applications and legal advice
- We are experienced in commercialising software, data, copyright and materials.
- We support your applications for translational funding, to enable the further development and proof of concept of the research. We manage internal seed funds for this purpose and will support applications to external translational funding sources too.
- Working with you, we partner and build relationships with industry, seeking feedback on how to improve the commercial prospects for your project. We market your opportunity on our website and to our networks.
- We negotiate licence deals and spinout formation, protecting your interests and fostering new relationships and industrial links for the academic group
- After the licence deal is complete, we manage the relationship with the licensee to make sure they meet their obligations, and distribute the financial benefits according to the University's Regulations.

Researchers from across the University who wish to provide academic consultancy or services are supported by our Consulting Services team, which also assists external clients to identify and engage with relevant staff from Oxford.

Our Venture Support & Funding team manages our seed funds and investor network. Members and ex-members of the University wanting to start or grow entrepreneur-driven ventures that are not University spinouts may apply to enter the Startup Incubator for support. If you founded a spinout company, you will also get to know the Spinout Equity Management team which looks after the University's own investments and equity in established spinouts.

Commercial and academic access to Patient Reported Outcome (PRO) measures, developed at the University of Oxford and other institutions, is offered by the Clinical Outcomes team.

INNOVATION SUPPORT IN THE UNIVERSITY

OUI is part of a strong network and infrastructure across the University, which supports researchers, innovation and entrepreneurship, including Research Services, departmental research facilitators, business development teams in the divisions, the Said Business School and science parks. The network is well connected and we all aim to work closely together.
We will put you in touch with the right person, if we can't help. You can find out more about the University's support network on our website at http://innovation.ox.ac.uk/university-members/ and at http://admin.ox.ac.uk.

QUICK FACTS ABOUT OUI

- **£22.5m total revenues** in 2016 *(£24.6m in 2015)*
- **£9.6m returned to Oxford University and its researchers** in 2016 *(£13.6m in 2015)*
- **21 spin-outs** created with our support in 2016
- **£1.4bn in external fundraising for spinouts since 2011**
- **855 deals** in 2016 (597 in 2015)
- **2873 patents and patent applications** on Oxford inventions managed by us *(2490 in 2015)*
- **£14m translational research funding** won by Oxford researchers with our direct support *(£25m in 2015)*
- **3535 days of innovation consultancy** delivered by Oxentia consultants
- We **changed our name** in June 2016, having previously been called Isis Innovation Ltd. Isis Enterprise changed their name to Oxentia in April 2017
- We **moved premises** in August 2015 to our present location near the Botley Road Park & Ride
- OUI is a **wholly-owned subsidiary** company of the University of Oxford, overseen by a board drawn from senior University staff and external members with broad industry experience.

(Year given is the financial year ending on 31 August)

WHAT CAN I EXPECT?

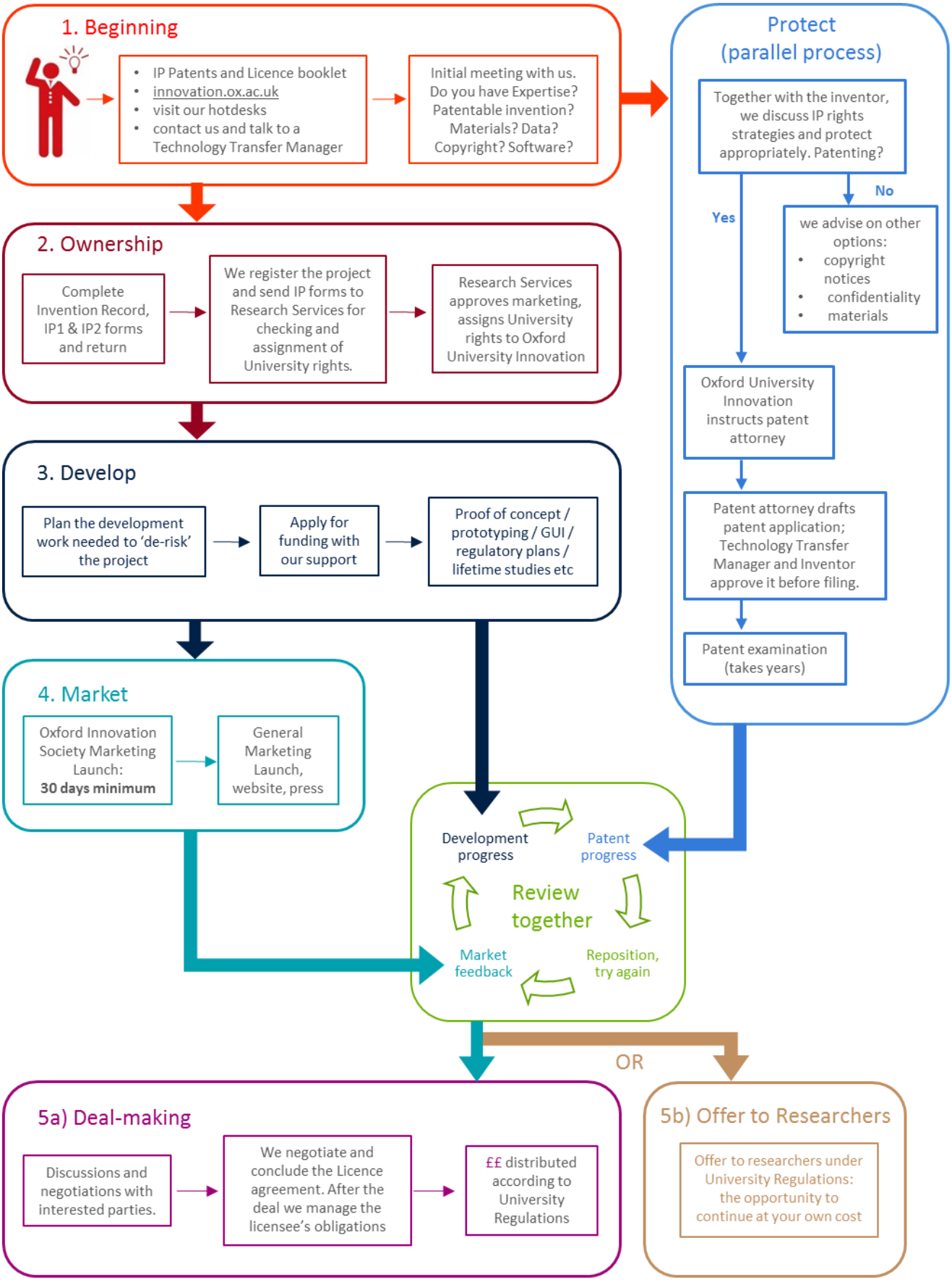
The foundation of successful research commercialisation is the relationship between the owners and potential users of intellectual property (IP). Achieving success is a team activity and we will need your active engagement as the project progresses, in the development of the intellectual property, technical development and the promotion of the expertise and IP asset. We hope you will want to make this time commitment, and many academics find it very interesting and worthwhile in providing valuable context to inform their further academic work and enrich their networks.

The chances of achieving a successful outcome for your project are significantly improved if you and the OUI staff work as a team to achieve common goals.

You will need to be willing to invest your time in different ways during the project, for example:

- Helping us to understand the significance and potential uses of your work;
- Working with our specialist patent attorneys on the initial patent drafting, if we file a patent. They will do the legal work and writing; your role is to help them understand the technology and its scope. Then, you'll be called on from time to time to provide technical support as needed while the patent application progresses through the examination system. The patent system takes some time and you are likely to find yourself providing further data during the first priority year, reviewing documents cited by the patent search examiner in the second year, and supporting the examination of the patent, typically 3-5 years after first filing;
- Planning the future work needed to demonstrate proof of concept and move the opportunity closer to commercial reality. We will help you apply for appropriate translational funding, and support you while you carry out the work. For example the proof of concept work needed could be broadening the range of examples, carrying out lifetime, cell line or animal studies, building a prototype, getting software translated into a more commercial code with a user-friendly GUI, turning a questionnaire into an app;
- Talking to potential partners to help them understand the value of your work and how it might be useful to them in their context.

HOW WILL MY PROJECT DEVELOP?



HOW WILL MY PROJECT DEVELOP?

Your project is likely to move through most of the stages of the technology transfer process:

Beginning

Start by getting in touch with us, if you haven't already! We will ask you lots of questions in order to understand what you have done and explore with you the commercial potential of your work.

- We encourage you to consider the commercial applications of your research at an early stage. What have you got? What is valuable, why, and to whom?
- We will help you to think about the best way to protect the research output. Do you have data, materials, software, copyright, questionnaires, an inventive technology? We use the Invention Record form (see below) to capture your initial thoughts on this, which is available on our website: http://innovation.ox.ac.uk/university-members/
- We evaluate the commercial potential of your work to achieve a financial return and will discuss this with you. Research commercialisation is a commercial activity and the money spent on patents, and the time of OUI staff, is an investment by the University from which a financial return is expected. Due to the early and complex nature of university research, the return is likely to be long term and difficult to define. Nevertheless, we need to establish clearly that a market (current or potential) exists before we invest.

Ownership

It is essential always to have a clear understanding of who owns IP arising from research activities. Establishing ownership of IP arising within Oxford University is the responsibility of Research Services (the IP Rights Management team).

- To assess ownership, we will need some information from you and we use forms to collect this information. Although this may seem bureaucratic, it is tremendously helpful in ensuring that we have all the information needed to get the project off to a great start. We are happy to answer any questions you might have about this
- The researchers provide all the necessary facts through the IP forms and invention record
- Oxford University Innovation checks that the forms are complete, registers the project and sends all the information to Research Services
- Research Services then follow the 'trail', from the research output, to the people involved, their relationship with the University, to relevant funding body terms and conditions and research contract terms. They will negotiate and make the necessary arrangements with any third parties that were involved
- Once this process of 'due diligence' is complete, the University will assign (or license) to OUI IP which it owns, so that OUI can exploit the IP

You can find the forms on our website: http://innovation.ox.ac.uk/university-members/

You will need to fill in:

- Invention record, if you haven't done this already
- IP forms – IP/1 and IP/2

Invention record

The Invention Record (available from http://innovation.ox.ac.uk/university-members/) is an important first step in creating a written description of your intellectual property. It fulfils several important purposes:

- It helps OUI to assess whether the work is patentable or protectable through other forms of intellectual property right, and assess the commercial potential
- It helps the patent attorney to prepare the draft patent, if we decide to proceed with patenting
- It helps give OUI and the University's Intellectual Property Due Diligence team an early indication as to the University's ownership of your invention, and identify issues which will need to be addressed downstream and
- It provides an important record of the work, providing a good description at a key point in the development of the intellectual property. This can become important in future if the work is commercially valuable

IMPORTANT: Discussions between you and OUI about your invention are confidential. To avoid any inadvertent public disclosure of your invention please consider all discussions about the invention confidential. Confidential Disclosure Agreements can be used to protect discussions with anyone outside the University and we are happy to help with this.

IP Forms

The IP/1 and IP/2 forms (available from http://innovation.ox.ac.uk/university-members/) sit alongside the invention record to give a full picture of how the work came about. They must be completed, signed by all researchers and returned to OUI before passing it to the University's Research Services to audit University ownership.

There are two forms:

1) **IP/1 Intellectual Property Due Diligence Form**, which asks about who did the work, when it happened and where all the funding came from. It is used in order to establish the 'chain of title' to the intellectual property – a clear picture of the ownership and any conditions on the intellectual property.
2) **IP/2 Intellectual Property Income Distribution Form**, which is used to understand the revenue distribution.

What we do with your data

We will hold the information that you provide for the purposes of registering your project with OUI and in connection with any of the work and the support that OUI provides. We will hold some of the information on a database which may be accessed outside the European Economic Area (e.g. by a member of staff travelling for work, and because the technical support for our service provider is outside the EEA, although the server storing the data is in the UK). We shall not disclose the data to any third parties except in connection with the support we provide to you and only to the extent necessary. For example, if a patent is filed on your technology and you are an inventor on that patent, we will be required by the patent office to disclose your name and departmental address. We may also be required to provide information about projects to the University's research funding and commercialisation partners (e.g. BRC, OSI, Technikos, BBSRC). The personal data requested in the IP2 will be used by the University for revenue sharing purposes.

Protect

Building defensible walls around inventions and other research outputs is essential. It is a complex and therefore expensive activity. We manage a large portfolio of patent families and have pursued initial applications through to granted patents on a global basis. There is no cost to you up front: OUI pays for filing and prosecuting patent applications, design rights and trademarks, using a range of patent attorneys and lawyers who are expert in high technology fields.

- We start by discussing IP rights strategies with you
- We protect the research output appropriately, using patents or copyright or other methods
- **THINK PATENT BEFORE YOU PUBLISH.** Any public disclosure before filing a patent can prevent you from obtaining a patent. It is not OUI policy to suggest delays to academic publications; so patent applications need to be prepared and filed in good time
- There is more information about patenting and other forms of intellectual property rights in the reference section at the end of this booklet

Develop

We help you to identify and plan the key development work needed to 'de-risk' the project to make it attractive for a potential licensee, for example:

Nature of project	Examples of the types of development work often needed
Software	e.g. translate from an academic coding language into a more commonly used commercial language, build a user-friendly interface, or gather evidence of user experience
Physical sciences	e.g. a prototype to be designed, built and tested, lifetime studies, or demonstrating a wider range of applications
Life and medical sciences	e.g. demonstration in a broader range of examples, screening of drug candidates, animal models or clinical trials. You might need input from regulatory experts, or to build a health economics case.
Questionnaires	e.g. validation of how the questionnaire outputs can be used and interpreted, translations, or user manuals
Idea for an app	e.g. build a database or generalise a database structure for broader applicability; provide a user-friendly interface; build the website
Any other not listed here	It all depends on the project and the market for it! The question is, what will a potential partner need to see in order to become seriously interested in using your project?

We support you in applications for translational funding and can advise on which source of funding is most appropriate, from the seed funds managed by OUI or the University, or from external funding bodies. The research councils and many of the charitable funders offer dedicated routes for translational funding. There is information about this on our website, see http://innovation.ox.ac.uk/university-members/translational-funding/.

Market

This is when we spread the word about the project:

- We market first to the Oxford Innovation Society, and then (after 30 days) through our wider networks
- We prepare and distribute non-confidential marketing information
- We use specialist searching skills to understand the market and identify potential commercial partners, proactively marketing to new contacts
- We publicise the project through our website and social media, using the press where appropriate
- We put appropriate confidentiality agreements in place to enable more detailed discussions
- Suggestions from the researchers about potentially interested parties, or appropriate contacts, are always useful
- We follow up potential leads and enter discussions with interested parties
- Marketing, Commercial Development and Confidentiality is described in more detail below

Review

We will review the project at regular intervals to ensure that, as the investment of time and money deepens, the likelihood of financial return also increases. Many factors are likely to evolve over the life of a project, including:

- The level of technology readiness (the facts of what you have done won't change of course, but your understanding of how this relates to market readiness and market need might change, and you might continue to work on the project)
- The route for the project to reach the market
- The size of the opportunity and its appeal to the market place
- The likelihood of achieving a return
- The strength and progress of any patent
- Your own willingness to continue to support the project

Patents get progressively more and more expensive as time passes. If we decide that we cannot continue to support a patent, it will be offered to you to continue with at your own cost under the University's Regulations. See below section 'Offer to Researchers'.

Deal-making

- Discussions and negotiations with interested parties
- Pricing, negotiating and concluding licence or other agreements associated with licensing and spinout activity. There is more detail about licensing below
- The legal arrangements describe the development and exploitation of IP to optimise the overall benefit to the researchers, host Departments, the University and OUI. They also protect the continued use of the IP by the researchers and University for academic purposes, and protect individuals and the University from risk
- After the deal we manage the licensee's obligations to ensure they report progress and pay what is owed
- The resulting revenue is distributed according to University Regulations (see Revenue Sharing from licensing on page 14).

Offer to Researchers

- You and your fellow researchers bring many interesting projects to OUI for commercialisation. Unfortunately, like other parts of the University, we have finite resources and so it is not possible for us to commit to invest in all projects indefinitely. Sometimes therefore, we unfortunately have to decide to stop a project.
- If in our view the potential commercial benefits no longer justify the continued investment of University resources in your project, we will offer the intellectual property to all the researchers involved in the project, in accordance with the University's Regulations. This gives the researchers the opportunity to take the intellectual property on at their own cost.
- If you wish to take up the offer, the IP will be assigned to you and you would then be responsible for all decisions, expenditure and commercial progress.

Marketing and confidential information, licensing, and protecting your intellectual property are all technical areas with many aspects to be aware of. Further reading follows in this reference section.

MARKETING AND COMMERCIAL INFORMATION

When a potentially valuable project has been identified and protected appropriately, we work with the researchers to explore the commercial opportunity. This involves identifying the right partner for commercial development and exploitation in the marketplace.

We will write a one page, non-confidential, summary of the project in conjunction with you which is initially distributed to the members of the Oxford Innovation Society, a group of leading industrial companies and potential investors.

One month after launching the technology to the Oxford Innovation Society, we will then contact other potential licensees, and publicise the opportunity to our wider networks, on the OUI website and elsewhere. We actively encourage networking between potential licensees and researchers, and attend industry-wide partnering events where we can talk directly to interested companies. Researchers are often well-connected to relevant companies already, this can be a rich source of potential interest and we encourage you to discuss your contacts with us.

Market exploration is an iterative process and it is fairly common for the early feedback from the marketing work to result in a change in emphasis or strategy, owing to the growing understanding of how the IP will be most useful in the marketplace.

Following expressions of interest from companies, OUI will arrange meetings to discuss possible commercial transactions with a view to entering into option, evaluation or licensing arrangements. You are likely to be involved in this as companies often want to hear directly from the researcher. Depending on the wishes, goals and needs of all concerned, the commercial transaction may also involve consultancy, service work or the funding of further research.

There are a number of considerations when choosing a partner(s), including:

- Do they have sufficient resources to take the technology to market;
- Do they have real intent to develop the technology (e.g. does it compete with in-house programmes?)
- Do they have awareness of access of the final products, where applicable, to developing countries (see below section on access to medicines)

Confidentiality Agreements

Academic researchers love to talk about their work, and sharing information is a vital part of being in academia. When it comes to talking to companies though, you need to think about what you share, and how. Your information is valuable, and knowledge that seems obvious to you may not be apparent to the person you are talking to.

We can help researchers wishing to enter detailed discussions about their inventions with third parties by putting in place a confidentiality (or non-disclosure) agreement. This protects both sides as the company may wish to share information with you too.

Keeping information confidential until it can be protected by, for example, patents is often essential in establishing links with industry. It is far harder to encourage a company to fund research or to licence technology if the company has no privileged or exclusive access to the research work.

Do	**Don't**
Give only outline information about work not published	Give away the detail of unpublished work without a confidentiality agreement
Talk freely about your already-published work	Talk in detail about the nitty-gritty of what you do at an early stage, ahead of patenting or publication
Put a confidentiality agreement in place if you need to have a detailed discussion before patenting	Get drawn into discussion without a confidentiality agreement, particularly before patenting
Think about whether you want to protect your IP at an early stage, before you start to publish anything at all about the work	Post key details on your website, or social media, or publish abstracts, and only realise later that you think it's commercially useful and you should have protected it first
In discussions with potential commercial partners, stick to talking about the use and purpose of the work - what it can do, rather than how you do it – at least until you have a confidentiality agreement in place	Give away all your best knowledge at a very early stage

DEAL-MAKING

A licence is an agreement involving the transfer of rights from one party ("the licensor") to the other ("the licensee"). These rights commonly control the use (for copying, manufacture, sale etc.) of an IPR (a patent, copyright material, confidential knowhow etc.). Licensing enables OUI to maintain ownership, and therefore control, of the University's IP whilst at the same time generating royalty income from the commercial use of the IP by the licensing partner.

The legal arrangements will, amongst other terms:

- Set out the scope of rights granted to the commercial licensee partner
- Set out the financial terms
- Protect the researchers and University's continued academic use of the IP
- Protect the individual researchers and the University from risk
- Protect the University's reputation
- If exclusive, require the licensee to develop the technology
- Set out the arrangements for the management of the IP
- Require the licensee to report on their use of the technology

A licence deal will set out the extent of the rights granted to exploit the IPR. For example, the licence may be exclusive or non-exclusive, in a particular market or for a particular purpose (referred to as the "field"), in a limited territory or worldwide, and for a defined period or for the lifetime of the patent.

Our licence deals always protect the right for the University and its staff and students to continue to use the IPR for academic and teaching purposes.

The commercial terms can include a lump sum payment, annual minimum payments, milestone payments payable on success, a royalty on the licensee's sales, and treatment of sub-licensing if this is allowed in the licence.

The overall deal structure may include other elements as well as the licence:

- A package of materials or data to transfer to the licensee
- A consultancy or service arrangement, under which the inventor gives the licensee company assistance as it establishes its use of the intellectual property. OUI supports academic staff undertaking consultancies through our Consulting Services team. We manage all the contractual and administrative aspects of consultancy, minimising the administrative burden while protecting your interests and those of the University. We also support departments to undertake departmental consulting and services work
- A research contract with the University, and this would be managed through Research Services for the University

There are certain terms of a licence, which **affect you directly**: confidentiality, improvements, and publication. Please discuss these issues with your contact at OUI.

- **Confidentiality**: the terms of the licence agreement (and occasionally its existence) and information about the licensee's development and commercial plans and activities are confidential to protect the University's and the company's interests.
- **Improvements**: licensees expect access to improvements in the technology so they can sell more, better products and to protect against your future ideas going to a competitor. The risk is the creation of a 'pipeline' through which your future ideas are pre-sold to a single company, who may in future become an unsuitable commercial partner. OUI limits the definition of 'improvements' to ideas by named individuals, within two years, within the scope of the licensed technology.
- **Publication**: companies sometimes insist on the right to review papers before they are submitted for publication; OUI limits any delay to up to 3 months.

Software Licensing

OUI has a strong portfolio of software technologies which are licenced to commercial organisations on an exclusive or non-exclusive basis. We are experienced in working with all forms of open source licences, and software which is made freely available to the academic community through open source licensing can sometimes still be licensed for commercial use.

Researchers are permitted by the University to release software on an open source licence provided that they:

- Have the approval of their Head of Department or his/her authorised delegate;
- Check any relevant funding which supported the creation of the software to make sure they are not breaching any terms;
- Ensure they have consent from any software authors who are not University employees or students;
- Comply with any third party terms, whether relating to funding or to software that they have used or incorporated in their software.

Further information can be found here: https://www1.admin.ox.ac.uk/researchsupport/contracts/opensource/ (single sign-on required)

Revenue Sharing from Licensing

For each piece of intellectual property, the revenue from successful exploitation by OUI (whether lump sums or royalties, from option, licence, assignment or other agreements), is:

- first subject to repayment of external project costs (including patenting – see page 9), exploitation, legal);
- OUI then retains 30% as a contribution towards its ongoing costs on this and other research commercialisation projects;
- the remainder, i.e. 70% of the net licence income, is then passed on to the University for distribution to the researchers, General Fund and Department, in accordance with University Council Regulation 7 of 2002.

Overall the distribution is as follows:

TOTAL NET REVENUE	RESEARCHER(S) TOTAL	GENERAL FUND	DEPARTMENT
Up to £50k	60%	10%*	0%
£50k to £500k	31.5%	21%	17.5%
Over £500k	15.75%	28%	26.25%

(Effective since 1st April 2003. *This figure is intended to enable the University to pay Employer's National Insurance Contributions but otherwise leave the General Fund out of distribution in that band).

Access to Essential Medicines in the Developing World

This is of particular relevance to human healthcare technologies and researchers should discuss with OUI appropriate measures, which can be taken. The University of Oxford and OUI are mindful of the importance of development and distribution of new health-related technologies for less developed countries. The University's policy when licensing its technology for commercial exploitation purposes is, as far as is practicable:

1) to prosecute patent applications in less developed countries only as necessary (for example, to provide development and marketing leverage for new products, or to exert leverage over global licensees); and
2) to grant licences with provisions that seek to increase the availability of medicines at affordable prices to less developed countries.

The University expects its commercial licensing partners to appreciate and cooperate with this policy.

Legal requirements affecting research on plant, animal, microbial and other genetic resources

Individual academics and researchers in the University have a legal obligation to comply with the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation.

Genetic resources in this context includes any material of plant, animal, microbial or other origin containing functional units of heredity which is of actual or potential value, or derivatives. (The Protocol does not apply to human genetic resources)

Researchers who source or use such material are required to "exercise diligence" to ensure that genetic resources and traditional knowledge associated with those resources have been accessed in accordance with applicable access and benefit sharing laws implemented by the source country, and keep specified records. Guidance for Oxford's researchers and research students is available at http://www.admin.ox.ac.uk/researchsupport/contracts/nagoya/

Conflicts of interest

Once your project is successfully commercialised, you have a financial interest which may generate real or perceived conflicts of interest in your continued academic role. All University members are subject to the University's Policy and Procedure on Conflict of Interest, which requires individuals to recognise their conflicts of interest, declare them, and take appropriate steps to manage them. OUI and Research Services are able to provide support if you have questions about this.

SPINOUT AND OXFORD SCIENCES INNOVATION (OSI)

A spinout is one route for commercialising your research outputs, in which OUI supports you to form a new company (the spinout) and this takes a licence to the intellectual property. You have freedom of choice about whether to form a spinout and if you are interested in finding out more, please talk to us. There is a separate researcher booklet about spinning out.

OSI was appointed in March 2015 as the University's preferred partner for funding and development of spinout companies from Medical Sciences and MPLS Divisions. OSI has now raised £580m for this purpose, which gives it the largest financial resources in the world dedicated to investing in spinouts from a single university.

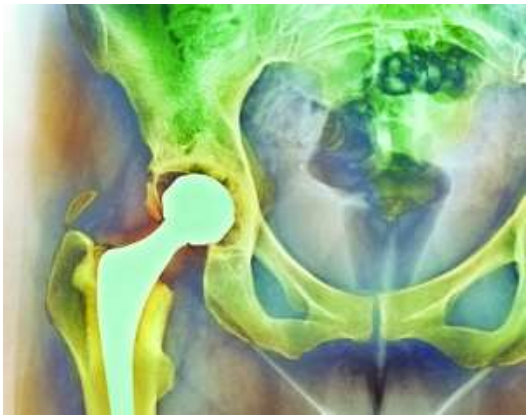
Confidentiality and early stage discussions

You may be approached directly by a member of OSI's team at an early stage. The partnership agreement between OSI and the University contains substantial confidentiality provisions. You can talk to OSI about your research without compromising patentability; OSI will keep your discussions confidential. Remember you may separately owe a duty of confidentiality to research funders and collaborators.

If you talk to OSI at an early stage about your research or technology, please tell either your Head of Department or OUI that you are doing so. Your Department's administrator or an OUI Technology Transfer Manager will gladly join any meeting on request, and we recommend this if you progress to discuss commercial terms, or any arrangement that might affect the rights of research funders or sponsors, collaborators or fellow inventors and developers.

CASE STUDIES

Clinical Outcomes



- The IP is copyright in questionnaires called Patient Reported Outcome Measures (questionnaires designed to be answered by the patients themselves)
- Extensively licensed non-exclusively to a wide range of healthcare providers, pharmaceutical companies and clinical trials providers
- The Oxford Hip and Knee Scores are used by the NHS to assess over 120,000 joint replacement operations each year
- The copyright is licensed at no charge to academic research institutions
- As well as the licences the researchers frequently provide consultancy services to clients, and we help them manage the sale of translations of the questionnaires
- The questionnaires were developed by researchers within the Health Services Research Unit within the Department of Public Health, in collaboration with surgical colleagues at the Nuffield Orthopaedic Centre

Flare Pan

- A heat-efficient cooking pan based on research by Thomas Povey, Professor of Engineering
- Designed to cook 40% faster than typical kitchen pans on gas with FIN-X technology
- Formed from cast aluminium and incorporating patented 'FIN-X' technology
- We worked with Dr Povey to protect his intellectual property, both patent and design rights, to win a Design Council award to complete professional design work and to market the opportunity and manage the license to the kitchenware store Lakeland

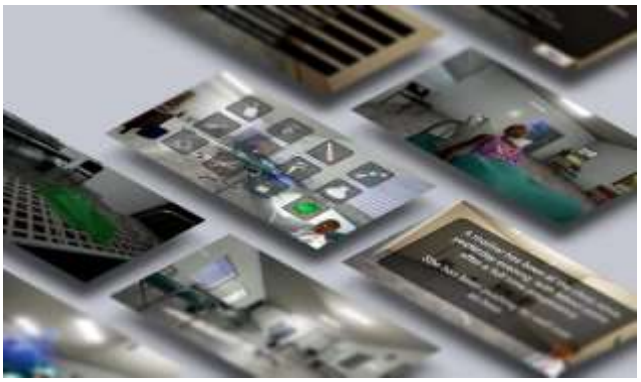
Antenatal health

- The Dawes-Redman CTG Analysis® system is licensed exclusively to Huntleigh Healthcare. Their SonicAid product is a hand-held monitor used to "hear" the foetal heartbeat, monitor the baby's health and detect any early signs of distress in pregnancy
- The licensed intellectual property is copyright in the software

OrganOx

- Oxford University Innovation spinout was founded in 2008 by Prof Peter Friend and Prof Constantin Coussios at Oxford's Department of Biomedical Engineering
- Developed the *metra* device - designed to keep organs at body temperature and pump oxygenated blood through them to maintain the blood flow
- In 2015, the first liver transplants used the *metra* device in North America and Europe

The LIFE-Changing Game



- LIFE is a scenario-based mobile gaming platform aimed at teaching healthcare workers to identify and manage medical emergencies, using game-like training techniques to reinforce the key steps that need to be performed for a healthcare worker to save the life of a newborn baby in distress
- The project was developed by Professor Mike English and his team at the University of Oxford in collaboration with a team of Kenyan doctors
- The first crowdfunding campaign to appear on the Oxford University crowdfunding platform, OxReach, successfully raised £80,717

Reasoning First: mathematical reasoning in Year 2

- The Reasoning First programme was developed by Professor Terezinha Nunes and the Children Learning Research Group from the Department of Education
- The programme is designed to promote children's quantitative reasoning, understanding the relations between numbers, and being able to use them to solve problems as part of developing their understanding of the logical principles underlying mathematics
- OUI worked with Terezinha to ensure that the programme (including training) was licensed to the schools, and managed subcontracting of the Work Group Lead

REFERENCE INFORMATION

More about protecting the intellectual property?

Intellectual property (IP) can be described as creations of the mind, for example technical inventions, literary and artistic works, software, designs, symbols, and names used in business.

The core concept of the IP system is that certain products of human creativity should attract similar legal rights to those applying to physical assets.

In the University context, IP is usually embodied in the outcomes of research. It typically falls into two main categories:

- inventions – which can be protected by patents
- software and written works – which are protected under copyright law

The main types of intellectual property right protected in law are:

IP RIGHT	COVERS	NEED TO APPLY?	MAXIMUM DURATION
Patent	Inventions	Yes	20 years
Copyright	Literary, musical, artistic works, & software	No	70 years after death of author
Database Right	Databases	No	15 Years
Registered Design	Image; look & feel	Yes	25 years
Registered Trade Mark	Name, logo	Yes	Unlimited
Confidential Information	Unpublished secret information	No	Unlimited

1. Patent

A legal monopoly lasting 20 years granted in exchange for describing an invention and paying fees to the Patent Office. A patent covers the concepts, not just the immediate examples. A patent position is destroyed by public disclosure of the idea before a patent application is filed (except for a short grace period in the US). **Think patent before you publish.** There is more detail about patenting below and on our website.

2. Copyright

Copyright applies to literary and dramatic works, artistic and musical works, audio and video recordings, broadcasts and cable transmissions. Copyright is also the usual way of protecting software, although some software may be patented if it is a functional part of an invention. Copyright arises automatically; it does not need to be applied for; and lasts 70 years after the death of the author. Copyright covers the actual text, not the creative ideas behind the text.

3. Database Right

Database rights apply to databases which are not protected by copyright (an EU right only).

4. Design Right

Design rights apply to aspects of the shape or configuration of an article. Unregistered design right (which covers computer chips, for example) can protect internal or external features. In the case of registered designs, the features must appeal to and be judged by the eye.

5. Trade Mark

A mark (logo) or other distinctive sign applied to or associated with products or services, which does not describe the products or services. Trademarks are typically used to protect brand identity.

6. Confidential Information

Confidential information is knowledge which only you possess and which you have only revealed under a non-disclosure/confidentiality agreement. Maintaining confidential information as a trade secret is significantly challenging in a University context.

All about Patents

A patentable invention must be:

- New
- Inventive
- Capable of industrial application, and must not fall into an excluded category (e.g. artistic creations, mathematical methods, some computer programs, and business schemes).

OUI and its patent attorneys will help with determining the question of patentability. Obtaining a granted patent is a complicated, time consuming and expensive process.

Although patenting is expensive (e.g. over £40,000 over five years), the rewards may be significant. If inventions are not properly protected, rights may be lost irretrievably.

THINK PATENT BEFORE YOU PUBLISH

Patenting will not prevent you from publishing your work. Public disclosures of the work can stop you patenting though – so it is important to get events in the right order.

A patent application can be prepared and filed quite quickly (days, more normally weeks) once a patent attorney has been instructed. A good time to initiate patent discussions is when you are drawing your work together, ready to start preparing a draft paper for publication. As soon as the patent application has been filed, the corresponding academic work can publish without delay.

Thesis submission to the Bodleian Library by a student does count as a public disclosure, because all theses in the library are made freely available for consultation. It is possible to apply for a temporary embargo (“dispensation from consultation”) for the thesis at the time of submission, which retains confidentiality of the thesis in order to permit patenting.

Preparing the patent application

In completing the Invention Record (see page 8), you will be providing to OUI important information to help the patent attorney draft the application.

In preparing a patent application the attorney:

- Describes the invention in detail
- Highlights those features of the invention which are new and inventive over what is already known
- Includes at least one way for the invention to be put into effect. Information on experimental examples and/or prototypes, although not essential, may make the difference in successfully securing valid patent protection. If you can demonstrate a range of examples, this will help to achieve a broad scope of protection in the patent
- Aims to describe the work in as broad a way as possible, so as to avoid others easily 'inventing around' your work
- Draws up the 'claims' – these are legal statements that define the scope of protection
- Will encourage you to speculate as to the possible uses of your work to a level beyond that in an academic publication

Inventorship

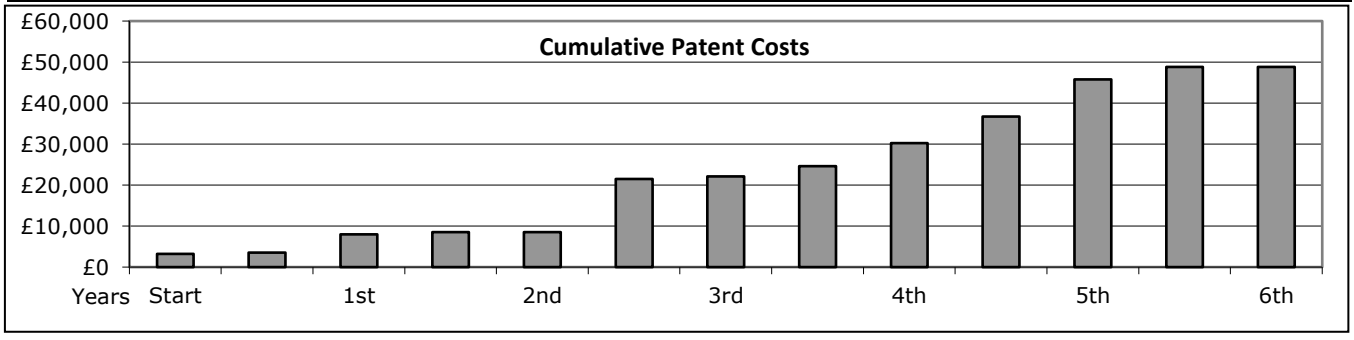
It is essential to identify accurately the people who made the invention(s) described in the patent application. The inventors are the "actual devisers" of the invention as described in the claims and inventorship is a matter of legal fact, not opinion. It is not necessarily the same thing as authorship of a corresponding academic publications. If the inventors are recorded wrongly, this may be enough for the patent authorities to refuse grant of the patent, or to revoke it once granted.
OUI and its patent attorneys are able to assist in discussions to establish correct inventorship.

There is more information on the OUI website about patenting: what counts as a public disclosure prior to patenting, patent search resources, keeping a laboratory notebook.

How will my patent application progress?

International patent law is a complex area and there are many possible routes. Most OUI patent applications proceed like this:

TIMESCALE	ACTIVITY
Start	• Patent Application filed in UK • establishes an international "Priority Date". • Further exemplification of the invention must be done within the next 12 months, this period being crucial for adding value to the patent. **PUBLICATION BEFORE FILING CAN PREVENT YOU FROM OBTAINING A PATENT**
12 months	• International protection is sought via the Patent Co-operation Treaty (PCT). • This enables filing of a single patent application to establish protection in a range of countries. It simplifies international patent filing and prosecution, and defers costs. • Over one hundred and fifty countries have signed the PCT, and these can all be designated in one patent application. • This is the last stage when more data can be added to the invention. • The researchers must have completed the IP forms before a PCT application is filed.
18 months	Patent Application published with search report.
2 years	Patent Examiner report received
2.5 years	**National Phase entry – key, expensive, decision point about which territories to pursue. Commercial interest is important to justify continued investment at this point.** Costs increase directly with the number of territories, and territories requiring translation are more expensive.
3-6 years	The patent attorney works with the OUI Technology Transfer Manager, inventor(s) and the examiner to negotiate and agree the Patent claims in each territory. The patent is granted / refused in each of the designated countries. Examination and grant are also expensive steps so we will continue to review the overall progress of the project during this time.
4 – 20 years	Annual renewal fees payable. The maximum life of a patent in most countries of the world is 20 years from the effective filing date (the PCT filing, if the route above is followed). Further protection can sometimes be achieved for some products in some markets e.g. Supplementary Protection Certificates.



OUI and its patent attorneys are able to assist and advise on all aspects of patenting.

Copyright, software, data and designs

Why not patent?

Whilst we do on occasion apply for patents to protect software, it is the exception rather than the rule. This is largely due to the rules over what you can and cannot patent, but is also due to the pace at which software can become outdated, or superseded.

Although the US is more open to software patents, in the UK and EU, you cannot specifically patent computer programmes, mathematical formulae, mental acts, business models or presentation of information, unless there is a specific technical effect that happens to be embodied in a piece of software, which can be hard to define.

However, if you think your software is particularly novel and inventive, please contact us at an early stage to allow us to assess the patentability of your IP and keep you informed of the options available to you.

The pros and cons of copyright

Instead, copyright is the more usual way of protecting software. On the plus side, copyright arises automatically (it does not need to be applied for) and lasts 70 years after the death of the author. This means there is nothing specific you need to do, for your software (or any other creative work) to have copyright protection.

However, we do recommend that you include a copyright notice in the headers of all source code files, help files, user manuals and/or 'about this software' pages, to make the assertion of copyright explicit. You should also note, that for copyright purposes, source code and object code are considered equivalent.

The minimal format of the copyright notice should be:

Copyright © [Year of first publication], [Name of owner, not necessarily same as Author, of copyright]

For example:

Copyright ©, 2002, University of Oxford

However, it is more usual to have a somewhat extended version, adding the title/name of the copyright we are claiming – 'mySoftware' and making the point 'All Rights Reserved'.

We also reinforce the moral rights (separate to copyright and retained by Authors) of the Authors. This entitles the authors to be referenced correctly (right of attribution) and for them to be able to protect the integrity of the works from abuse (alteration, distortion, mutilation or other form of derogatory treatment).

For example:

mySoftware © Copyright, Oxford University Innovation Limited 2014. All Rights Reserved. The authors, being Professor C. Babbage, Dr A. Turing & Ms A. Lovelace have asserted their moral rights.

Somewhat less advantageously (but very importantly), copyright only protects the code, and not the ideas contained therein. Therefore, if it is your idea that is fundamentally innovative, rather than the code itself, or if the code is relatively short or simple, you should be very careful about disclosing source code, without an appropriate licence or agreement in place, or indeed at all in some cases. Again, your technology transfer manager will be able to advise the most sensible approach to take with your code.

For example, if someone can understand what you have done, just by looking at your code, and then independently reproduce the same functionality themselves from scratch (so long as the code is substantively different), then they have not infringed your copyright.

However, if they have simply taken your code and translated it into another language (eg Java to C++), then this would be considered a 'derivative' work, and they would need an appropriate licence to do so, without infringing your copyright.

Third party copyright

So far, we have only looked at your own copyright, but it is very likely that in the course of developing your software, you will have made use of other people's copyright.

This might be simply the use of a text editor or a development environment (eg Matlab, LabView, Mathematica, R, X-code, Visual Studio, etc), but might also include SDK's, libraries or frameworks. Often there are few implications to using such third party tools and/or code in a non-commercial manner (ie as part of your academic research), but when you decide to commercialise your software, you may need to have a specific commercial licence (as is the case for both Matlab and LabView).

Additionally, if you have used code released under some open source licences, there may be specific restrictions as to what you can do with your own code. For example under the Gnu Public Licence (GPL), you must release the source code of any derivative software under the same GPL licence.

However, there is a distinction depending on whether the third party code is included in your own software (making your software derivative), or merely linked to from your code (which remains an 'original' work).

For example, generally it is fine if your software requires the third party code to be pre-installed on the computer, but not if it is compiled into the same binary (at this point, your compiled code becomes a derivative work, even if your source code is original). There are specific questions about these aspects of 3rd party code in the invention record, and it is important to discuss this with your technology transfer manager.

Data

Data itself cannot be protected with IP Rights but the way the data is collated and presented can sometimes be protected. There is copyright in a written report, and a package of data can be licensed as Know-How if it is kept confidential.

A large amount of data organised into a database structure does not generally fall under copyright (unless there is substantive originality in the arrangement of the contents), but databases have their own 'database right' in Europe, if there has been a substantial investment in obtaining, verifying or presenting its contents.

Like copyright, database right is automatically assigned, but the term of protection is much shorter. Database right lasts for 15 years from making but, if published during this time, then the term is 15 years from publication. Like other forms of IPR, data can be subject to rights of others so care is needed if you are using data from third parties.

Designs

Designs are sometimes an output of research, for example the design of a circuit board, a better bicycle helmet but also the aesthetic design of a common object. Design right protects the shape, configuration and appearance of objects, but not the ideas behind them. You can register designs for better protection.

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