



# REVIEW OF IP MANAGEMENT AND CONFLICTS OF INTEREST

**Intellectual property policies and their implementation, and the management of conflicts of interest in respect of IP commercialisation within Higher Education Institutions in Ireland**

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## About IP Pragmatics Limited

IP Pragmatics ([www.ip-pragmatics.com](http://www.ip-pragmatics.com)) is a specialist consultancy that provides a range of intellectual property management and commercialisation services to assist universities, government research institutes and companies to increase their commercial revenue from their research, expertise and facilities. The company helps clients to create and realise value from their intellectual property assets through the provision of integrated intellectual property and business development services.

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## **1 EXECUTIVE SUMMARY**

Complementing their teaching and research activities, knowledge transfer including commercialisation is now well established as a key mission of higher education institutions (HEIs) worldwide. In Ireland, the ecosystem to support commercialisation of HEI intellectual property (IP) has been evolving rapidly, driven by the desire to increase the impact of research and to bring benefits in terms of jobs and investment into Ireland.

The Irish government has taken a pro-active approach to encouraging and supporting entrepreneurial activity and sharing good practice across the sector.

In 2012, the national policy for research commercialisation was published and remains in force. The policy involved cross-departmental government input in its development and brings a consistent approach to commercialisation and industry interactions across the HEI sector. It lays down the principles underlying commercialisation in the HEI sector including that HEIs should commercially exploit IP that arises as a result of State funding for research and development and that HEIs shall aim to maximise the benefits of commercialisation to Ireland rather than focusing exclusively on the benefits to the HEI. The policy also makes it clear that it is appropriate and desirable that HEIs should benefit from commercialisation and should provide incentives to the researchers involved in creating the IP.

Initiatives such as the Technology Transfer Strengthening Initiative (TTSI), the introduction of the national research commercialisation policy and IP Protocol, and the establishment of Knowledge Transfer Ireland (KTI) as the national office with responsibility for the knowledge and technology transfer system, have undoubtedly made a step change to commercialisation activity within Ireland. This has provided more clarity around the process of commercialising IP, and a supportive environment to encourage these practices. Strong examples of leading academic commercialisation success are important to reinforce the culture needed for successful commercialisation.

More recently, there has been an increasing recognition of the potential for conflicts of interest to arise when IP is commercialised from the higher education sector, and public scrutiny on governance of higher education institutions has increased. This study, commissioned by the Higher Education Authority (HEA) and KTI, has looked at the governance processes and implementation of IP policy within HEIs to ensure that appropriate systems and good practice are adopted across the sector.

The higher education sector in Ireland includes diverse institutions with distinct missions. This diversity delivers varied types and levels of research and balance of commercialisation activities, and requires different IP management processes, within the parameters of the national IP Protocol to maximise the benefits of commercialisation to Ireland as a whole.

The basic processes of IP commercialisation from higher education institutions worldwide follow the same pattern, and HEIs in Ireland are no different. All the HEIs studied have policies in place for IP management, and employ experienced technology transfer and other dedicated professionals to carry out these day-to-day activities. The majority of these policies are comprehensive, defining responsibilities for the different activities and explaining how IP will be managed and disputes will be resolved. On a practical level, many potential conflicts of interest relating to commercialisation of IP

are avoided by sound IP policy and the implementation of robust IP management systems which prevent the conflicts from arising in the first place or mitigate them where they do arise.

However, the development and implementation of suitable policies is an ongoing process of evolution, and some weaknesses still remain. Five key areas were identified where further development is needed:

- **Communication:** the policy documentation, particularly surrounding conflicts of interest is fragmented and confused; availability is poor in some places. All the relevant policy documents should be readily available online and regularly updated, and the relationships between them simplified.
- **Processes:** the detailed processes around decision-making in institutions, particularly those relating to spin-out formation, could be better articulated, as this lack of clarity may cause issues to arise. The processes for management and recording of conflicts of interest are also poorly defined.
- **Conflicts of Interest:** this is well recognised within HEIs as an issue at a high level of governance, but responsibility is always placed onto the individual rather than taken collectively within the HEI. Specific conflict of interest policies are uncommon and are not sufficiently well advanced. HEIs should take more responsibility at a senior level to put robust conflict of interest management systems in place and to monitor their implementation and effectiveness.
- **Spin-outs:** the circumstances surrounding each individual spin-out will dictate the relative equity stakes to be taken between the HEI, the founding academics, and third parties such as business champions and investors. There is a need for greater clarity across the sector around the approach to be taken to determining these stakes, and the decision-making processes involved. This should be more nuanced and less formulaic, but nevertheless be guided by some overarching principles which are consistently applied at a national level.
- **Ownership:** IP policy and management, as well as control of potential conflicts relating to IP commercialisation have been largely devolved to the technology transfer offices or Vice President for Research & Innovation, and there is a need for further buy-in and responsibility at senior management levels. Accountability processes linking decisions to the overall governance structure are needed, particularly for conflicts of interest.

To increase consistency of approach across the sector, it would be useful to define a framework, setting out the minimum components of good IP management, spin-out approval, conflict of interest and other relevant policies and practice. This framework needs to reflect the requirements of the current national IP Protocol and resource guide, and individual policies should be revised and updated in line with these new initiatives as they are introduced.

Ten key recommendations have been identified which would strengthen the IP policies, management procedures, and management of conflicts of interest relating to the commercialisation of IP from the Higher Education Institutions within Ireland:

1. **Single IP policy:** Every HEI should have a single IP policy covering all major commercialisation routes, including spin-outs, to make it simple for researchers to understand the processes and their obligations. This policy should be easily and publicly available on their website, regularly

reviewed (at least every 4 years) through internal consultation, and approved by the Governing Body. The date of review and approving body should be recorded on the policy.

2. **Common IP policy framework:** KTI, in consultation with HEA and others, should support consistency across IP policies by working with the HEIs to develop and agree a framework of minimum components to be included in every IP policy, reflecting the requirements of the current national IP Protocol. Where groups of HEIs have similar procedures, a common policy format is preferred.
3. **Clear decision-making and dispute resolution processes:** All IP policies should include a clear description of decision-making processes relating to IP commercialisation, with a dispute resolution process. Certain decisions such as spin-out formation or significant asset realisation should involve at least one senior executive HEI decision maker who is not part of the academic research hierarchy, for example the Secretary or Financial Controller.
4. **Common principles underpinning spin-out formation:** The individual circumstances surrounding the formation of each spin-out are too variable for fixed equity shares for the HEI or founders to be predetermined within the IP policy. However, there should be a set of common national principles that explain the basis upon which equity shares are taken and the consideration involved. KTI, in consultation with HEA and others, should lead the definition of these principles as part of the ongoing development of the national IP Protocol.
5. **Clarity on revenue share mechanisms:** Revenue share mechanisms should be clearly described in the IP policy for both revenue from licensing and equity realisation, and for equity share, and must conform to the national IP Protocol. This should include consideration of how royalty revenues received from any spin-out companies in which a researcher is a significant shareholder will be distributed.
6. **Determination of creator contributions at initial disclosure:** The relative contributions from multiple creators of intellectual property should be determined and agreed between the creators in writing as part of the invention disclosure process, and confirmed before commercialisation.
7. **Awareness of potential conflicts of interest within IP commercialisation:** The IP policy should clearly describe the potential for conflicts of interest arising within IP commercialisation and how the IP management policy and procedures support their avoidance or management. It should also direct researchers to the relevant section in the Conflicts of Interest policy.
8. **Dedicated conflict of interest policy:** Every HEI should have a single Conflict of Interest policy which is easily and publicly available on their website, regularly reviewed, and approved by the Governing Body. This should include reference to actual and potential for conflicts relating to IP commercialisation and their management and should point to the detailed information and processes outlined in the HEI IP policy which are designed to mitigate many such conflicts.
9. **More robust governance and management of conflict of interest:** Whilst responsibility for recognising and avoiding conflicts of interest should remain with the individual, HEIs must take more responsibility at a senior level to put robust procedures in place to identify, manage and record the approach taken to avoid or manage conflicts of interest. A summary of all potential conflicts reported and management mechanisms put in place should be reviewed by the Governing Body at least annually.
10. **Triggers for policy review:** Automatic review of each policy should be triggered if there is a significant change in national policy and guidance, for example within six months of the introduction of updates to the national IP Protocol or Code of Governance.

## **2 INTRODUCTION**

In June 2017, IP Pragmatics Ltd were appointed by the Higher Education Authority (HEA) and Knowledge Transfer Ireland (KTI) to undertake a review of Intellectual Property (IP) Policies and their implementation within Higher Education Institutions (HEIs) and the management of conflicts of interest (CoI) in respect of IP commercialisation.

The Higher Education Authority oversees governance and accountability within higher education institutions in Ireland. Part of its role includes the promotion and monitoring of good practice in governance across the sector, and it has set up a programme of rolling reviews of specific governance procedures, with the aims of:

- providing assurance that governance processes are operating effectively;
- informing understanding of how particular aspects of governance are implemented within HEIs;
- assessing whether there are any deficiencies to be addressed;
- assisting in the development of best practice approaches across the sector.

Knowledge Transfer Ireland was established in late 2013 as a partnership between Enterprise Ireland and the Irish Universities Association. KTI's mission is to support business and the research base to maximise innovation from State funded research by getting technology, ideas and expertise into the hands of business, swiftly and easily for the benefit of the public and the economy. In doing this, it works closely with Ireland's Higher Education Institutions and State-funded Research Organisations ("Research Performing Organisations", RPOs) and research funders. Following an extensive review led by KTI, an updated version of the national IP Protocol was published in 2016. This Protocol and associated Resource Guide<sup>1</sup> includes policies and guidelines in the management of IP to help industry make good use of public research in Ireland. These guidelines are translated into actions by the RPOs, and include requirements to manage conflicts of interest, and to share income from the commercialisation of IP within the RPO.

Over the last couple of years, there has been an increasing recognition of the potential issues surrounding conflict of interest when IP is commercialised from the higher education sector, and public scrutiny on governance of higher education institutions. HEA and KTI therefore wished to commission this review to investigate the current status of the governance processes and implementation surrounding this area, to ensure that good practice is adopted across the sector.

The review was undertaken in accordance with the methodology established for the conduct of periodic governance reviews, as set out within the Governance Framework for the Higher Education System. This involves combining comprehensive analysis across the system with more in-depth field work with a selection of institutions to identify areas of best practice and recommend improvements at a system level<sup>2</sup>. The review covered 22 HEIs – 7 Universities, 14 Institutes of Technology and one

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<sup>1</sup> <http://www.knowledgetransferireland.com/ManagingIP/KTI-Protocol-2016.pdf>  
<http://www.knowledgetransferireland.com/ManagingIP/KTI-Resource-Guide.pdf>

<sup>2</sup> <http://hea.ie/funding-governance-performance/governance/governance-framework-for-the-higher-education-system/>

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specialist College. We collected and assessed relevant documents from all of these institutions, and supplemented this with in-depth interviews with a sample of five HEIs to understand in detail how their policies and procedures are implemented in practice. These five HEIs were nominated by HEA and KTI, and were chosen on the basis of having a relatively high level of IP commercialisation and spin-out formation activity.

The main aims for the study were to:

- Review HEI IP policies and their implementation as described in the national IP Protocol
- Review the policies and procedures in the HEIs for the management of Conflicts of Interest in respect of the commercialisation of intellectual property
- Assess whether there are any deficiencies to be addressed
- Assist in the development of best practice approaches across the sector

To address these aims, this study gathered evidence through three routes:

- Collection and analysis of the IP policies and Conflict of Interest policies in place at each HEI.
- Review of the responses to a short questionnaire completed by each HEI relating to their processes for IP management and for resolving conflicts of interest relating to IP commercialisation.
- In depth interviews carried out with five HEIs to understand how their policies are implemented in practice.

Full details of the Terms of Reference and the approach taken to carry out the review are given in Appendix 1: Methodology.

For consistency in this report, we have referred to the HEI function that is primarily responsible for IP management as the Technology Transfer Office (TTO), although this function has different names in different institutions. Industrial Liaison Office (ILO) is a common name amongst the Institutes of Technology (IoT), which reflects the wider responsibility of this office for industrial collaboration in these organisations. We have also used the term Governing Body as used in IoTs to also refer to the equivalent Governing Authority used in universities.

## 2.1 BACKGROUND

Complementing their teaching and research activities, knowledge transfer including commercialisation is now well established as a key mission of higher education institutions worldwide. This is driven by the desire of HEIs and their funders to ensure that the outcomes of their research are taken up and used as widely as possible, for the benefit of society and the generation of vibrant local commercial ecosystems. Universities in the US were amongst the first to develop internal mechanisms to promote and support commercialisation activities, and this has been followed by many other countries.

The primary objectives for funding into HEIs are to deliver high quality teaching and research, to produce the talented citizens of tomorrow and the discoveries and developments that have the potential to improve society and the economy. Commercialisation of intellectual property is an important additional activity with wide-ranging impacts beyond revenue return. It can deliver direct

and indirect economic, educational, and societal rewards, often over a long time-frame. For example, benefits of commercial IP projects include, but are not limited to:

- Training of doctoral and postdoctoral researchers;
- Jobs secured in or investment attracted to Ireland through collaboration with industry;
- Improvement in the quality of higher education (and, ultimately, of graduate skills) deriving from the research activity;
- Improvement in HEIs' reputations and rankings (supporting, among other things, the recruitment of international students and recruitment and retention of world-leading researchers);
- Education and public outreach associated with research;
- Improvements in health outcomes, environment, culture, and quality of life.

As an innovative process, the inputs into commercialisation are diffuse in nature. Ideas for innovation originate from many sources, often in a non-linear or organic fashion, and multiple funded research projects can combine to lay the foundations for the generation of future IP.

For these reasons, conveying the impact from investment in research in quantitative terms is inherently problematic. It is neither appropriate nor advisable to compare research and administration inputs with IP outputs as a measure of value for money; this would be a reductive exercise.

In Ireland, the ecosystem to support commercialisation of HEI intellectual property has been evolving rapidly. The larger, research-intensive universities have had well established TTOs for many years, and have extensive experience of licensing their IP and founding successful spin-outs. The Irish government has taken a pro-active approach to encouraging and supporting entrepreneurial activity and sharing good practice across the sector. This has been particularly focused on improving the Irish economy overall, and bringing benefits in terms of jobs and investment into Ireland.

A key component of this support is the Enterprise Ireland Technology Transfer Strengthening Initiative (TTSI) which serves to bolster the capability within the knowledge transfer system in Ireland. This initiative was first introduced in 2007, and brings together 26 research performing organisations (including Universities, Institutes of Technology and state research bodies) into 8 consortia. By providing funding to the TTOs that support these HEIs, the TTSI catalyses the development of the TT profession in Ireland, and encourages collaboration and sharing of best practice. The third phase of TTSI was recently announced, extending and sustaining professional TTO practices for a further 5 years.

The success of this programme to date can be seen in the annual figures for 2016<sup>3</sup>, which show:

- 1,243 research agreements signed
- 28 spin-out companies created
- 186 licensing agreements signed

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<sup>3</sup> [http://www.knowledgetransferireland.com/About\\_KTI/Reports-Publications/KTI-Annual-Review-and-Annual-Knowledge-Transfer-Survey-AKTS-2016.pdf](http://www.knowledgetransferireland.com/About_KTI/Reports-Publications/KTI-Annual-Review-and-Annual-Knowledge-Transfer-Survey-AKTS-2016.pdf)

In 2012, a formal national research commercialisation policy was developed to bring a consistent approach to commercialisation and industry interactions across the HEI sector. It laid down the principles underlying all activity, and this was accompanied by a national IP Protocol. Following a recommendation in that protocol, Knowledge Transfer Ireland was founded in 2014. KTI is a unique resource, and acts as a central national office to support knowledge and technology transfer across Ireland. It aims to strengthen and standardise the Irish knowledge transfer infrastructure, and has taken on responsibility for the TTSI, and development of the national IP Protocol. Following a comprehensive consultation and review, a revised version of the Protocol was introduced in 2016.

These initiatives have paid dividends. In the European Commission's Knowledge Transfer Study 2010-2012<sup>4</sup> (published in June 2013) Ireland is ranked first (out of 23 European countries) in terms of a composite indicator of knowledge transfer performance of public research organisations in individual countries. A comparison of regulations and practices in these organisations with the European Commission's 2008 "Recommendation on the management of intellectual property in knowledge transfer activities and Code of Practice for universities and other public research organisations" also showed that the practice of HEIs in Ireland followed the Code nearly perfectly, and was continuing to evolve with the introduction of new knowledge transfer support initiatives.

All these developments have contributed to rapid change within many of the HEIs in Ireland, with an increased focus on IP commercialisation and building productive links with industry which is still developing. Good progress has been made, and the landscape today is very different from that of a few years ago as more robust processes and procedures have been spread across the sector. Some of the most relevant frameworks guiding these changes are described below.

### **The National Research Commercialisation Policy**

All HEI activity surrounding commercialisation must be carried out within the framework of the national research commercialisation policy. This was formulated in 2012 by a specific Policy Group with representatives from the higher education sector, funders, and cross-departmental government agencies, and re-stated in the updated 2016 version of the national IP Protocol. The full text of the policy is given in Appendix 2. For the purposes of this review, some of the key components of the policy are:

- Where commercially exploitable IP arises as a result of State funding for research and development, the opportunity shall be taken to commercialise the IP in all possible fields, applications and territories.
- The purpose of this commercialisation, from Ireland's point of view, is to maximise the economic and societal benefits and returns to Ireland from its public investment in research.
- Commercialisation shall also, as far as possible without compromising these policy statements, benefit the Higher Education Institutes and State-funded Research Organisations ("Research Performing Organisations", RPOs) and provide incentives to the Researchers involved in creating the IP.
- RPOs shall aim to maximise the benefits of commercialisation to Ireland rather than focusing exclusively on the benefits to the RPO.

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<sup>4</sup> [https://ec.europa.eu/research/innovation-union/pdf/knowledge\\_transfer\\_2010-2012\\_report.pdf](https://ec.europa.eu/research/innovation-union/pdf/knowledge_transfer_2010-2012_report.pdf)

- RPOs shall have policies and procedures in place that are publicly published and enable them, to the extent that is reasonable, to give industry an acceptable and consistent level of confidence around the management of IP arising from their research.

### **The IP Protocol Resource Guide**

To support the RPOs in implementation of this policy, and to give confidence to industry and to State research funding organisations, the Department of Business, Enterprise and Innovation, through KTI, published an IP Protocol Resource Guide as part of the national IP Protocol. This Resource Guide includes nine National IP Management Requirements which each RPO must fulfil in designing and operating its own internal IP management system:

1. Ensure early awareness amongst Researchers of the importance of IP management
2. Set obligations on individual Researchers to ensure IP is managed in a professional way
3. Maintain confidentiality
4. Protect IP arising from research Projects and Programmes
5. Introduce existing background IP into a research Programme diligently
6. Conduct appropriate due diligence before licensing IP
7. Maintain records of IP and licences
8. Manage conflicts of interest
9. Implement systems for the sharing of income from the commercialisation of IP within the RPO

### **The Code of Governance**

All HEIs must follow the relevant Code of Governance for their type of institution<sup>5</sup>. The codes of governance for the universities and Institutes of Technology were jointly agreed between the HEA and each group of institutions and were then adopted by the respective individual governing authorities – Irish Universities Association (IUA) and Institutes of Technology Ireland/Dublin Institute of Technology (now Technological Higher Education Association, THEA). Institutions make annual returns to the HEA in respect of their compliance with a range of issues, consistent with the requirements of the codes. As part of the overall review of governance during 2015, the HEA strengthened the reporting requirements from institutions as part of the annual governance return, and a revised template was issued to the sector for the returns for 2013/14 and subsequent years.

In August 2016, the Department of Public Expenditure and Reform published a revised Code of Practice for the Governance of State Bodies. This introduced several changes including the concept of ‘comply or explain’, performance delivery agreements, periodic critical reviews and self-assessment annual evaluation for boards. During 2017, the HEA has worked closely with universities and Institutes of Technology to update the respective codes of governance to ensure that they take full account of the revised State Code. This work should conclude by end 2017 with new codes of governance launched in the first half of 2018, following approval by the governing authorities of each institution. As part of this ongoing piece of work, the HEA has already introduced a revised annual governance return to higher education institutions to be completed for the returns for 2016/17 onwards.

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<sup>5</sup> <http://hea.ie/assets/uploads/2017/06/IOT-Code-of-Governance.pdf>  
<http://hea.ie/assets/uploads/2017/05/Governance-of-Irish-Universities-2012.pdf>

Each Code of Governance strongly recommends that the HEI should introduce a Code of Conduct, which should include principles for addressing conflict of interest, and provides an outline template for the content of this code. These templates do not address all possible situations that may arise, but instead give a set of principles that provide guidance to employees on acceptable and unacceptable behaviour. In relation to conflict of interest for academic staff, these existing (2012) template Codes of Conduct (contained within the Codes of Governance) include the following clauses:

- The governing authority/body will not allow management or employees to be involved in outside employment/business interests in conflict or in potential conflict with the business of [name of university/Institute]. It will put in place appropriate arrangements to give effect to this;
- It is acknowledged that the acceptance of positions following employment and/or engagement by a third/higher level institution can give rise to the potential for conflicts of interest and to confidentiality concerns. The governing authority/body of [name of university/Institute] will consider any cases in which such conflicts of interest or confidentiality concerns may arise and will take appropriate steps to deal with such matters in an effective manner during a reasonable period following employment by a third/higher level institution. The governing authority/body will also ensure that any procedures that it may put in place in this regard are monitored and enforced.

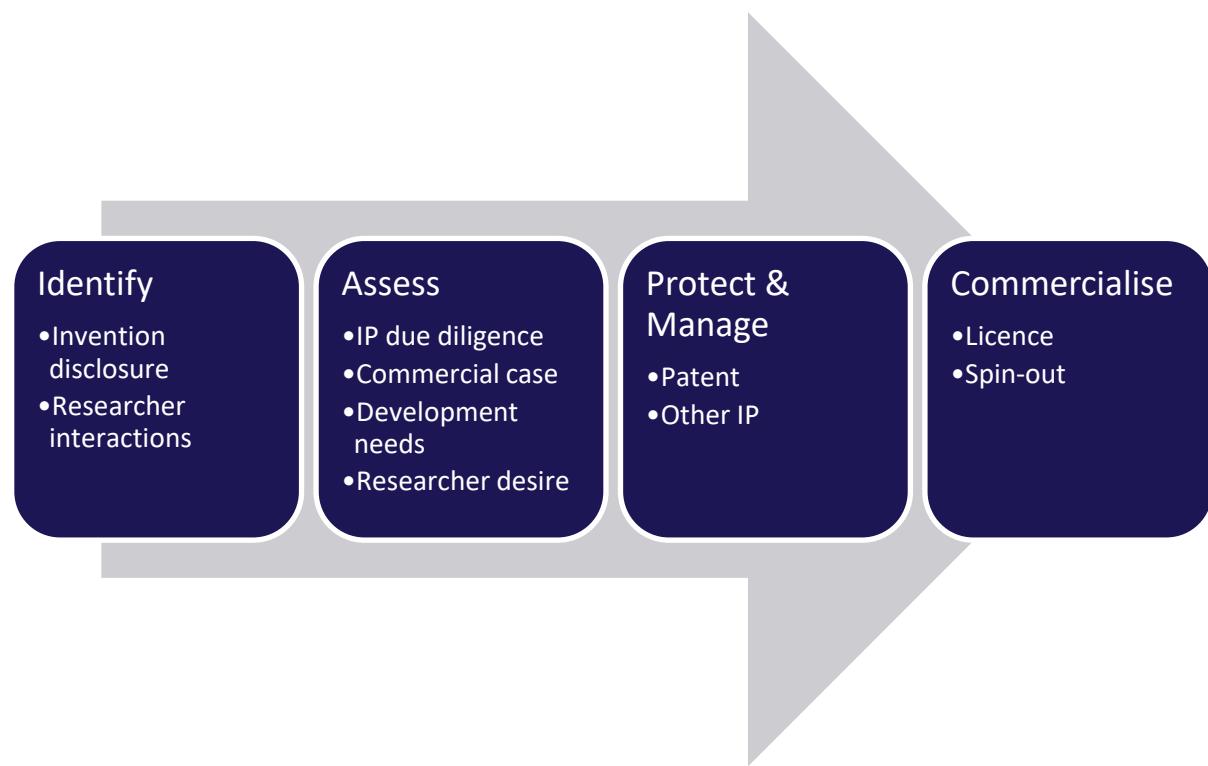
The draft codes of governance to be agreed and introduced in 2018 state that the HEI should have introduced a Code of Conduct, and re-affirm the responsibility of the Governing Body to put in place an appropriate arrangement that ensures that management and employees are not involved in outside employment/ business that is in conflict with business of the Institute. They also provide a template Code of Conduct for Employees, and state that matters relating to conflict of interest in relation to academic activities are dealt with in a separate Policy on Conflict of Interest, which also outlines relevant reporting and other procedures. The revised annual governance return issued by the HEA to higher education institutions in respect of 2016/17 onwards also includes a specific provision that codes of conduct be put in place and implemented and that they include clear conflict of interest and ethics in public office policies.

Conflicts of interest may occur in many situations, including teaching, research, consultancy, and in relation to the members of the Governing Body. This report only considers conflicts of interest which may arise in relation to the commercialisation of IP, and does not address these other types of conflict. However, the approach that the HEI takes to management of conflicts of interest will need to take into account the full range of potential conflicts of interest, and adopt a consistent approach.

### 3 IP COMMERCIALISATION OVERVIEW

The basic processes of IP commercialisation from higher education institutions worldwide follow the same pattern. Once academic research has developed some new insights which may be useful, this must first be recognised and captured. Responsibility here rests with both the researcher to report their new ideas, and the TTO to understand the types of research within their HEI and how these may be of interest to industry. After the opportunity has been disclosed, it must be assessed to understand whether it has commercial value, whether it can be protected by patents or other types of formal intellectual property rights, and what further development will be required to make it suitable for commercial use. This activity is led by the TTO, but will generally also involve input from the researcher, including exploring the role that they wish to play as the opportunity is moved towards commercial exploitation. In the majority of situations, putting formal IP protection in place is a vital but costly part of the process; without a competitive advantage, industry may not be willing to commit the resources needed to develop the opportunity to the point where it can be offered as a commercial product or service. The final stage is to understand the best route to bring the new opportunity to market. The role of the TTO in this phase is essential to identify the right partners and negotiate deals which are fair to both the originating HEI and the licensee or new spin-out company.

In reviewing the evidence gathered in this study, we compared the HEI approaches with this schematic of good practice in IP Management:



The evidence presented in the following sections of the report supports our finding that **all the HEIs studied have policies in place for IP management, and employ experienced technology transfer**

**professionals**, or dedicated resource, usually within a specific academic support function, to carry out the day-to-day activities described above. The majority of these policies are comprehensive, defining responsibilities for the different activities and explaining how IP will be managed and disputes will be resolved. They do not include any processes that are significantly out of step with good international practice. Some gaps were identified in some of the policies, however, in particular in the details of spin-out formation and responsibilities for decision-making.

These policies and processes help to provide clarity around the process of commercialising IP and a supportive environment to encourage involvement from the academics. In addition, a number of HEIs have positive role models of commercialisation success within their senior research faculty, which is essential to reinforce the culture needed for successful commercialisation.

One of the objectives in higher education in Ireland is to sustain and to grow a coherent system of diverse institutions with distinct missions (including universities, IoTs and colleges). This diversity naturally translates into varied types and levels of research and commercialisation activity. The scale and type of research activity varies significantly between the HEIs studied. This necessitates different IP management processes depending on the HEI, and their diverse missions and objectives for commercialisation, within the parameters of the national IP Protocol. This mirrors the situation found elsewhere in the world, where the resources and activities that are appropriate for a highly research intensive university will differ from those that are needed at a more applied institute. This finding was emphasised in last year's McMillan review<sup>6</sup> of good practice in technology transfer in UK universities. In all cases, we found that the HEIs were following the priorities laid down in the national IP policy to maximise the benefits of their commercialisation activity to Ireland rather than focusing exclusively on the benefits to the HEI, for example by supporting new Irish company formation and doing deals that encourage local job creation.

The introduction of the Technology Transfer Strengthening Initiative and the influence of Knowledge Transfer Ireland have undoubtedly made a step change to commercialisation activity within Ireland, spreading good practice in these areas across all the HEIs and delivering impact in terms of growth of companies and jobs. **We found a strong foundation of good practice, but nevertheless did identify a number of areas where policy and implementation could be further improved.** These are discussed in the detailed analysis that follows.

### 3.1 FACULTY AWARENESS

The first requirement of the national IP Resource Guide is to ensure early awareness amongst researchers of the importance of IP management. We found that **all the HEIs used a range of different mechanisms to reach their academic staff and research students** both to inform them about their IP policy and to raise awareness of the potential for commercialisation activities. The case study in the sidebar below describes some of the mechanisms uncovered during the in depth interview with one HEI.

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<sup>6</sup> <http://www.hefce.ac.uk/pubs/rereports/year/2016/ketech/>

The annual KTI Impact Awards<sup>7</sup> are well regarded within the HEIs as a way to raise the profile of their commercialisation activities, and are valued by the researchers for bringing external validation to their work.

## **IDENTIFYING COMMERCIALISATION OPPORTUNITIES**

At HEI 3, there is a limited amount of academic research, so the TTO takes a very proactive approach to ensure that no potential commercialisation opportunities are missed. This starts with monitoring all the types of research project that are likely to have commercial application right from the funding stage, and catching up with progress at the halfway point and as the project nears completion. The TTO also actively engages with their SFI funded interdisciplinary Research Centres which benefit from deep industrial links. As well as regular talks during staff induction, the TTO runs seminars and presentations, and sponsors an inventor competition for both staff and students. Every year they survey all researchers both to monitor customer satisfaction and to raise awareness.

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<sup>7</sup> <http://www.knowledgetransferireland.com/KTI%20Impact%20Awards/>

## 4 IP POLICIES

Each Irish HEI should operate an IP management system that meets the National IP Management Requirements. This is implemented by putting in place an IP policy which lays out the rights and responsibilities of HEI staff and departments. We gathered the IP policies from each of the HEIs, and carried out a gap analysis on their contents. In the gap analysis, we were comparing the policies against the following elements which would be expected to be found in a best practice IP policy:

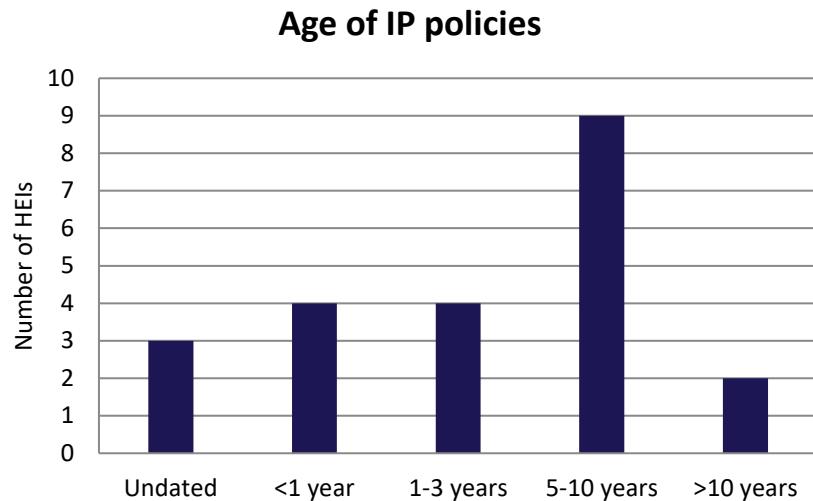
Well publicised and easily accessible	Regularly reviewed	Defines what types of IP are covered
Describes ownership in different situations	Clearly defines responsibilities of researchers	Clearly defines how the HEI will identify and manage IP
Covers all major exploitation routes	Includes a revenue sharing policy	Explains decision making and dispute resolution

We also looked for evidence that the HEIs were fulfilling the nine National IP Management Requirements, described in section 2.1.

### 4.1 IP POLICY AVAILABILITY

**All 22 HEIs have approved IP policies in place.** Eight of these have been updated in the last three years, and at least three more are currently being updated or revised. In many cases this is to incorporate the guidance contained in the updated national IP Protocol 2016. Introduction of a new national Protocol or similar revised guidance would be expected to trigger a review within each HEI to ensure that their policies were still in line with the new recommendations, and to refer the reader to the new document. Where draft policies were provided, we have reviewed both the old and the proposed versions, and highlighted any differences in the gap analysis which follows.

Ten of the HEIs have policies which are over five years old. This is not necessarily of concern if the content has been reviewed more recently to ensure that it is still fit for purpose and meets the requirements of the national IP Protocol. However, this was not clearly recorded in the policy documentation provided.



**Availability:** the majority of HEIs (17) have current IP policies which could be accessed publicly online<sup>8</sup>; however, these are not all easy to find and do not all include version control or latest review date. Outdated policies were found online in three cases.

**Updating:** the majority of HEIs (17) state they review IP policy regularly (at between 1-5 year intervals). However, it was hard to verify if this was followed in all cases, as 11 policies are over 5 years' old and do not record the date of last review. During the in-depth interviews, we found that the time needed to review, update, consult on, approve and introduce a new version of the IP policy can take at least a year, due to the internal consultation processes required, which may involve the IP Committee, the Research Committee, the Executive Board, the Finance Committee, the Academic Council, HR, union representatives and/or post-graduate representatives.

**Policy ownership:** In most cases (20 HEIs), the policy is owned by the VP Research & Innovation or equivalent (12 HEIs) or the TTO/ILO (8 HEIs), and updates are also led by one of these offices. One IP policy is owned by the Registrar, and one by the senior management team. The ultimate approval level required before formal introduction of a new or updated policy is either the Governing Body (14 HEIs), the Academic Council (4 HEIs), the Executive Board (3 HEIs) or the President (1 HEI).

Although all the HEIs have an IP policy in place, these cannot all be accessed publicly as required in the national IP Protocol. Public availability is important to give confidence to external stakeholders that suitable policies are in place, as well as to make it simple for academics to find information about their responsibilities. The lack of timely and formal updating is also of concern and undermines the authority of the older policies. Reflecting the importance of the IP policy to the HEIs, new or updated policies should be approved by a senior body of the HEI after broad internal consultation, and the date of review and approving body recorded on the policy.

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<sup>8</sup> As at September 2017

### KEY RECOMMENDATIONS:

- Single IP policy:** Every HEI should have a single IP policy covering all major commercialisation routes, including spin-outs, to make it simple for researchers to understand the processes and their obligations. This policy should be easily and publicly available on their website, regularly reviewed (at least every 4 years) through internal consultation, and approved by the Governing Body. The date of review and approving body should be recorded on the policy.
- Triggers for policy review:** Automatic review of each policy should be triggered if there is a significant change in national policy and guidance, for example within six months of the introduction of updates to the national IP Protocol.

## 4.2 KEY POLICY ELEMENTS

Throughout this report, the same approach is used when reporting the gap analysis of the content of the policies, which are presented as a tabular overview with each box representing the status for one HEI for the question. Green boxes show that the question is addressed in the policy, red boxes show that it is not addressed, amber boxes are used where the question is not fully addressed, or it is unclear, and yellow boxes show that the question is not addressed in the existing policy, but will be included in the (currently unapproved) revised version. The numbering of the HEIs is consistent between all the tables presented.

**All 22 HEIs have IP policies that cover the key elements** of IP ownership by staff and students, include a definition of the types of IP that are covered, and describe when and how an invention may be patented and commercialised. The table below summarises the results of this gap analysis:

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the policy address IP ownership by staff?	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
Does the policy address IP ownership by students?	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
Does the policy include a definition of what type of IP is covered by the policy?	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
Does the policy distinguish between types of copyright (scholarly works vs software)?	Green	Red	Red	Red	Red	Red	Red	Yellow	Red	Green	Green	Green	Green	Red	Green	Red	Orange	Red	Red	Red	Red	
Does the policy address patenting?	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
Does the policy address licensing?	Orange	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Orange	Green	Orange	Green	Green	
Does the policy address spin-outs?	Green	Green	Red	Red	Red	Red	Orange	Yellow	Red	Orange	Orange	Orange	Orange	Red	Red	Red	Red	Orange	Red	Orange	Red	
Does the policy include an arbitration procedure for disputes relating to IP management?	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Orange	Red	Red	Red								

Yes     No     Not fully / unclear     Only in unapproved draft

All but one of the HEIs takes the most typical approach used in the UK and the US: that IP which is generated by staff during the normal course of employment belongs to the HEI as their employer. In the one exception, this IP belongs to the creator, unless it was generated using significant HEI resources. The creators are, however, able to assign the IP to the HEI in order to take advantage of their commercialisation support. As well as permanent staff members, many, but not all, policies also cover visiting academics and consultants, which are commonly encountered in academic activity. Dual appointments, where an academic holds a position at two organisations (for example as a university medical researcher alongside a clinical appointment at the university hospital) are not common in Ireland. Where this does occur, the policy of the host institution will typically apply where research is undertaken on their premises and/or using institution funding. One HEI uses a joint ownership approach for such researchers, which is not recommended.

The definition of the types of IP that are covered by the policy varies, and is not sufficiently comprehensive in all cases.

It is standard international practice for an IP policy to distinguish between copyright which relates to an invention (for example software code) from copyright which arises in scholarly publications and other works by academic staff, which are usually treated differently. As a matter of academic freedom, scholarly works would not normally be claimed by the university or institute. Only nine of the Irish HEIs surveyed make this distinction, one is unclear, and two more will introduce this in their updated policy.

#### **COMMON IP POLICY FORMATS**

A group of eleven Institutes of Technology studied all share a very similar IP policy with some adaptations to local practice. These IoTs wished to share practice and documentation, to build consistency of approach. This commonality is helpful both to the academics and to potential industrial partners.

Whilst a single IP policy for all HEIs in Ireland may not be achievable, a common framework which specifies the minimum components that would be expected to be found in every IP policy would help to ensure that all the policies cover the basic requirements. KTI would be well placed to take the lead in developing this framework.

As a minimum, it would be expected that every IP policy should include a discussion of the processes involved in the two major commercialisation routes of licensing and spin-out. All the policies cover licensing as a route to commercialisation. Ten HEIs address spin-outs in their IP policy, and three of these also expand their guidance on spin-outs or campus companies in a separate document. A further four HEIs (coded amber in the table) also have a separate document covering spin-out and do not cover spin-outs in any detail in their main IP policy. Separating spin-out procedures from the main IP policy is not helpful, as it increases the complexity of the documentation, and will be discussed

further in section 4.5 below. The policies which do not cover spin-outs are from HEIs which are less research intensive, and less likely to actively form spin-outs. However, even if the HEI is not currently creating spin-out companies it needs to have procedures in place for when such a situation arises.

All policies should also include mechanisms for dispute resolution.

#### KEY RECOMMENDATION:

- Common IP policy framework:** KTI, in consultation with HEA and others, should support consistency across IP policies by working with the HEIs to develop and agree a framework of minimum components to be included in every IP policy, reflecting the requirements of the current national IP Protocol. Where groups of HEIs have similar procedures, a common policy format is preferred.

#### 4.3 RESEARCHER RESPONSIBILITIES

Requirements 2, 3 and 4 of the IP Protocol Resource Guide set obligations on individual Researchers to ensure IP is managed in a professional way, to maintain confidentiality, and to protect IP arising from research Projects and Programmes.

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the policy emphasise the importance of maintaining confidentiality of new inventions until the potential for IP protection has been assessed and applied for if appropriate?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the policy require researchers to document their research results (eg through lab notebooks, etc)?	No	No	Yes	No	No	No	Yes	No														
Does the policy require researchers to promptly notify the RPO's TTO whenever IP with commercialisation potential is identified?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the policy require researchers, students, etc to aid the RPO in protecting its IP rights, eg to formally assign rights to the RPO where appropriate?	Yes	Yes	No	Yes																		
Does the policy describe the invention disclosure process?	Not fully / unclear	Not fully / unclear	No	Yes																		
Does the policy refer to the HEI's invention disclosure form?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

 Yes   
  No   
  Not fully / unclear   
  Only in unapproved draft

The fundamental responsibilities of researchers are well covered in the IP policies. This includes maintaining confidentiality and not disclosing new inventions until they have been assessed, notifying the TTO of new inventions, and working with them to protect the IP. It is worth noting that just because a process is not covered in the policy document itself, this does not necessarily mean it does not happen within an HEI, as it may be handled in other guidance or procedures, or in implementation rather than policy itself. This will not always be possible to ascertain, so it is recommended that all the key requirements laid down by the IP Resource Guide are included within the policy for completeness.

All 22 HEIs include processes for the formal assignment of IP to the HEI in their policy document, and this is specified as a requirement in the IP Protocol before commercialisation. A template assignment document which can be adopted by the HEIs is available on the KTI website. However, in the in-depth interviews we discovered this does not consistently happen in all cases. Formal confirmatory assignment is important to smooth later due diligence on licensing or spin-out. At one of the in-depth interviewees (HEI 1), no patent application can be filed until all the confirmatory assignments are in place, which ensures that this step is not overlooked.

All HEIs use an invention disclosure form (IDF). The two that do not mention it specifically in their policy did describe use of an IDF in their responses to the questionnaires. Use of IDFs is good

international practice, as it provides a formal mechanism to investigate and record the invention, the ownership and any encumbrances on the intellectual property, and to identify all those who have contributed towards the invention. The IDF provides a structure for information gathering and the assessment of the potential commercial opportunity that follows. This is also a good opportunity for the division of any later revenue income between the inventors to be agreed and documented, as the memory of relative contributions to the work will be fresh, and opinion will not be swayed by the prospect of imminent commercial gain. This distribution should be revisited before commercialisation to ensure that any additional contributions to the opportunity since the initial disclosure are taken into account.

A template IDF is available on the KTI website.

## **RECORDING RESEARCH IN SFI CENTRES**

The most formal systems for recording research results are found in the SFI funded collaborative Research Centres. These centres implement a laboratory notebook system, with books which are issued and logged by the TTO, with numbered pages where research outcomes are recorded and signed off. For software development, this type of system is not appropriate, but automated headers can be used to record who is writing the code, and the date, or a software development management system may be implemented to track updates and version control.

## **AVOIDING FUTURE DISAGREEMENTS**

The invention disclosure procedure at HEI 14 involves the creator(s) and the TTO working together to complete the IDF template form, allowing them to capture the background knowledge of the researcher. The IDF is used to check the funding sources and origin of materials that have been used to support the research, to establish who owns the opportunity, and whether anyone else is due to share in any commercial outcomes. The creators will also discuss with the TTO the relative contributions of each of them to the opportunity, which is confirmed with the relevant Head of Department to ensure that all those involved in developing the opportunity have been included. This is generally done by mutual agreement, but in some cases, particularly where a patented invention is proposed, an external patent attorney has been used to mediate. These contributions are recorded, and signed off by the researchers and Head of Department, and are used to apportion any later revenue sharing if income is received from commercialisation of the opportunity. Finally the IDF and all the associated documents are recorded in the departmental database and stored in a common location.

**KEY RECOMMENDATION:**

- Determination of creator contributions at initial disclosure:** The relative contributions from multiple creators of intellectual property should be determined and agreed between the creators in writing as part of the invention disclosure process, and confirmed before commercialisation.

**4.4 REVENUE SHARING**

Revenue sharing is covered by requirement 9 of the IP Resource Guide to implement systems for the sharing of income from the commercialisation of IP within the RPO amongst the RPO centrally, the originating Department and researchers who are inventors and/or originators.

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the policy include a revenue share arrangement?	Yes																					
Does the policy include arrangements for dividing revenue share between multiple inventors?	Not fully / unclear																					
Does the revenue share policy refer to distribution of equity in spin-outs?	Yes	Not fully / unclear	No	No	No	No	No	No	Only in unapproved draft	No	No	No	No	No	Yes	Not fully / unclear	Only in unapproved draft	No	No	No		
Is the policy explicit about whether an inventor can share in revenue through both royalties and equity relating to a spin-out?	Yes	No	No	No	No	No	No	No	Only in unapproved draft	No	No	No	No	No	Not fully / unclear	No	No	No	No	Only in unapproved draft		

Yes     No     Not fully / unclear     Only in unapproved draft

Of the 22 HEIs, **20 have a revenue share policy which divides the revenue into three parts**, including a share for the creator, a share for the HEI, and a share for their academic affiliation (most often this share goes to the researcher's academic Department (8 HEIs), but in some cases it goes to their Research Group, School, College or Faculty). All these options provide local incentivisation to the wider research team as well as the individual creators, and fall within the guidance of recommendation 9. The two exceptions divide the revenue between the creator and the HEI, but do not include a share for the creator's Department. The HEI share may be formally or informally ring-fenced for innovation or commercialisation support, which provides the foundation for a "virtuous circle" encouraging further commercial activity. As is the case elsewhere in the world, these payments are distributed net, after direct costs such as patenting expenses have been reclaimed.

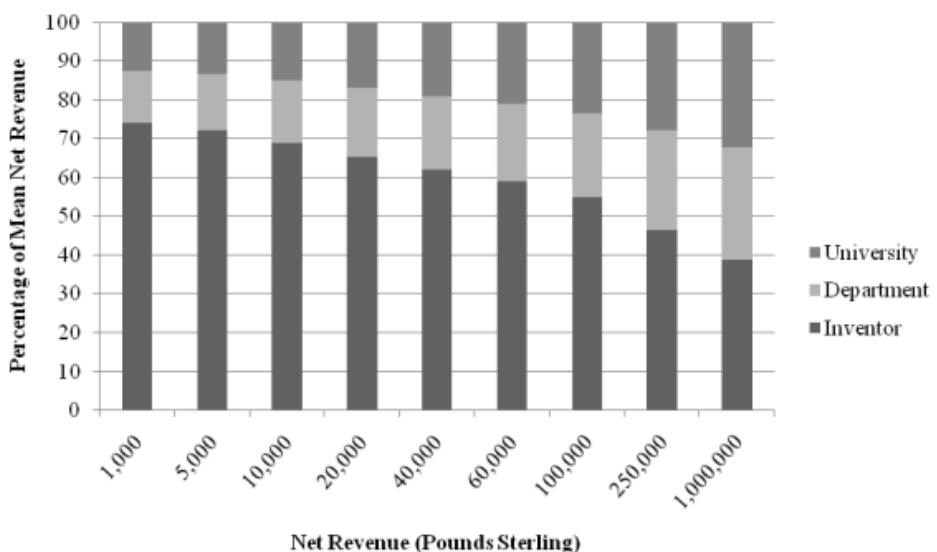
Twelve of the HEIs distinguish between different types of IP in their revenue share arrangements, with different arrangements for non-patented IP which have more flexibility. This distinction is not commonly drawn in UK IP policies, but does allow the HEIs to vary the reward sharing depending on the relative amount of effort and investment needed from the HEI to protect the invention. In line with practice in many other international HEIs, there may also be opportunities to reward all those

who have made significant contributions to the commercial opportunity, not just those formally listed as inventors on a patent application. One HEI extends this approach, by varying the revenue shares depending on the number of creators involved, allowing multiple creators to share a little more of the returns.

A 2011 PraxisUnico<sup>9</sup> report assessed the revenue sharing policies deployed by 84 universities in the UK. It offers an overview of how universities structure these arrangements in general. Of the policies that pay out against net revenue, 55% of the 71 universities in the 2011 survey that had comparable policies also split the revenue 3-ways: inventors, university and department/school. Typically the university and department shares are equal, although not always. The usual model is to have the inventors share reducing with the increase in revenue. This model is also used widely in Ireland, with 19 HEIs adopting this approach. Since this 2011 report, changes to the inventor share in the UK have demonstrated an increase rather than decrease, with greater average percentage of net revenue allocated to the inventor.

The graph below shows the mean percentage share of net revenue between the inventor, their department and their university in the 2011 PraxisUnico UK study:

### **Distribution of Revenue by UK Universities between Inventor, Department and University**

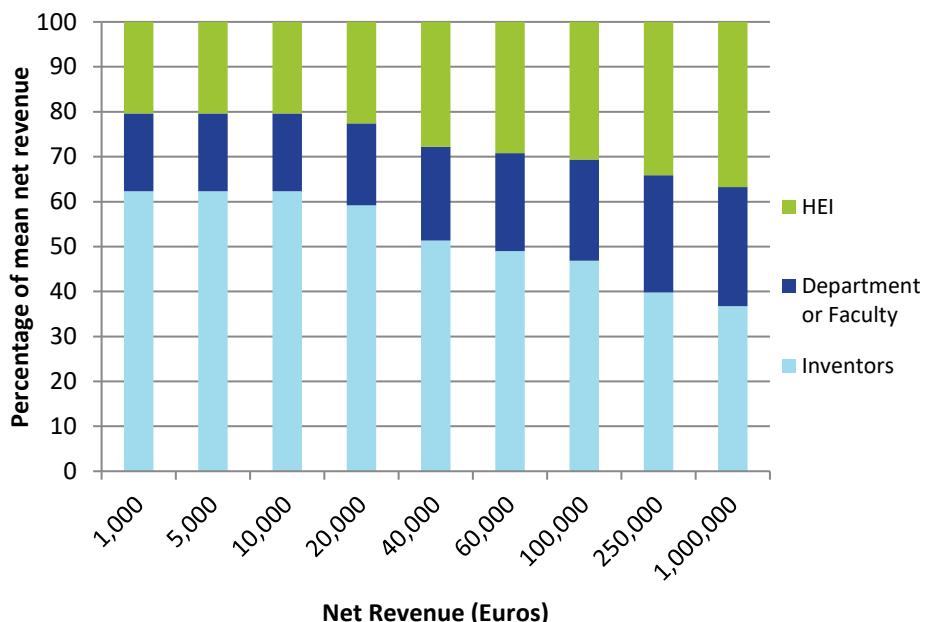


For comparison, we have analysed the revenue shares offered by the Irish HEIs into comparable revenue bands, with the results shown in the graph below. This shows a very similar pattern to that found in the UK. However, the relative share retained by the HEI in Ireland is a little higher across the board. In terms of revenue sharing policy, Irish HEIs are therefore less generous to their researchers and protect their institutional interests to a greater extent than their UK counterparts.

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<sup>9</sup> Revenue Sharing Policies: An Assessment of Current Policies at UK Universities. James Gazzard and Sarah A. Brown. Royal Veterinary College. May 2011. <http://journals.sagepub.com/doi/abs/10.5367/ihe.2012.0077>

### **Distribution of revenue by Irish HEIs between Inventor, Department and HEI**



Within this broad similarity of approach, there are significant differences in detail, particularly at low levels of revenue. It is becoming more common in the UK for lower levels of revenue to be given largely or solely to the inventors/originators, as these sums offer a good incentive to the researcher to get involved with commercial activity, but would make little material difference to the finances of the HEI. In Europe, however, an equal three-way split at all income levels is more typical.

The revenue sharing mechanisms described above apply to income received from licensing, such as royalties, milestones and annual payments, and in most cases also to the proceeds of equity realisations, for example when shares in a spin-out company are sold. Only eight of the Irish HEIs describe in their policy how shares in any spin-out company may be allocated to the founding inventors. Spin-out formation will be discussed in more detail in the next section, but this lack of clarity reflects the model of spin-out creation which is adopted by many of the Irish HEIs, which tends to be a more hands-off approach, placing much of the role of driving the activities onto the researcher.

Only five of the HEIs address in their policy whether a researcher may receive a share in royalty revenues received from the HEI licensing IP to spin-out companies in which the researcher also holds a significant shareholding. All of these take the approach that the inventor cannot receive both types of return.

International best practice is not consistent on this point, which should be linked to the underlying reason for granting founder shares to the inventor. If these shares are in recognition for the transfer of their IP into the company, then it could be unreasonable for them to also share in any royalty receipts which reward the same IP input. However, if the founder shares are to reward and incentivise the future involvement of the founder in the spin-out, then they could also share in the royalty revenues to reflect their contribution to the original intellectual property as these would be considered as two different value-creation events. Ultimately what underpins the decision on

revenue and equity share is clarity on what the different transactions are intended to cover. This helps both to manage conflicts and to manage expectations of all parties.

**Whilst the broad principles are covered by all the HEIs, there is a lack of clarity over the detail of some of the revenue sharing mechanisms, which could provoke disagreement.**

**KEY RECOMMENDATION:**

- Clarity on revenue share mechanisms:** Revenue share mechanisms should be clearly described in the IP policy for both revenue from licensing and equity realisation, and for equity share, and must conform to the national IP Protocol. This should include consideration of how royalty revenues received from any spin-out companies in which a researcher is a significant shareholder will be distributed.

#### 4.5 SPIN-OUT FORMATION

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Are spin-out arrangements covered in the IP policy?	Yes	No	Yes	No	No	No	Yes	No	Only in unapproved draft	Yes	Yes	No	Yes	No	No	Yes	No	No	No	No	No	
Is there a separate policy/guidance specifically for spin-out arrangements?	Yes	Not fully / unclear	No	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No
Does the policy specify that the RPO will receive equity in the spin-out?	Yes	No	Yes	No	No	No	No	Not fully / unclear	Only in unapproved draft	Yes	No											
Does the policy require the company to have an acceptable business plan before approving spin-outs?	Yes	Yes	Not fully / unclear	No	No	No	Yes	Yes	No	Yes	Not fully / unclear	No										

[Legend: Yes (green), No (red), Not fully / unclear (orange), Only in unapproved draft (yellow)]

As reported here and in section 4.2, **many of the HEI IP policies do not detail the procedures surrounding spin-out formation**, and others relegate this information to a separate campus company policy. This lack of comprehensive information in a single document makes it very difficult for a researcher to understand what is involved in spinning out a company, and how to navigate the approval processes. We would suggest that the processes relating to all the major commercialisation routes, including spin-out, are included for every HEI within their main IP policy, as recommended in section 4.1. This means the researchers will have only one policy to consult, which includes information about why the HEI chooses to commercialise, provides a consistent approach, and describes revenue shares and equity allocation all in one place. For the HEIs, this also has the advantage of having a single policy document to review and update.

Of the HEIs that specify that they will take equity in a spin-out, three define the percentage they will take in their IP policy (set at 5, 15 or 25%), and 10 specify that it will be determined on a case by case basis, but give guidelines of typical stakes (most commonly 15%, with a range of 5-20%). However in

the majority of cases it is not stated at what stage of the process this percentage equity is taken and with whom the equity is shared. In effect this means that it could range from 15% pre-investment which would be immediately diluted when funding is raised, to 15% taken only after a pre-agreed investment is made in the company. In the UK, Europe and the US, the approach taken to pre-determination of equity stakes in spin-out companies within public policy documents is varied. Many universities have policies and guidance which cover the allocation of equity stakes in spin-out companies between the university and the academic inventors. Some institutions take a formulaic approach, but it is more common for the default position to be open to negotiation based on a complex set of inter-related criteria. In the UK and Europe, it is more usual for the equity negotiation to take place before the company raises initial investment, and the quoted share proportions are before any investment money. In the US, it is more common for a spin-out company to build its business plan and identify investment before it negotiates with the university, and the share proportions quoted are more often post-investment money.

The default positions quoted by different universities in the US and the UK have been reported to range from 5-100% equity for the university<sup>10</sup>, and this wide range hides the complexity of the underlying policies. Care should be taken in interpreting this data as the figures quoted may not be directly comparable. In the US, the university equity stake will often include anti-dilution provisions, and so will remain the same after investment money is brought into the spin-out. For UK universities, the figures quoted are generally the percentage taken when there are only two types of shareholder: the university and the academic founders. Both university and

## **WHAT DOES 15% EQUITY REALLY MEAN?**

There has been much discussion around what represents a standard equity stake in spin-out companies for Irish HEIs. As noted in this report, many HEIs specify a guideline of a 15% equity stake in their spin-out companies. This study looked at how these guidelines translate into practice, and found very different characteristics and returns around the headline 15% stake in different HEIs. For example:

One HEI takes 15%, but this equity level is received only after the spin-out has raised a pre-determined level of investment which will allow them to operate for 12-18 months. The HEI also receives additional revenues from an arms-length licence of the IP to the spin-out, but will waive their up-front licence fees in return for the equity stake.

Another HEI takes 15%, but this is fixed before any external investment goes into the company. This equity stake is in return for the licence of the IP, and they will often waive royalty payments, particularly when the IP is based on software. The HEI has deliberately adopted this approach in order to incentivise spin-out formation in their quest to support their local economy.

A third HEI may receive 15%, but this varies between 2-18% depending on the technology and the spin-out circumstances. The equity is allocated before any investment is raised, but will only be taken at the time that the IP is licensed into the spin-out. This licence is on standard industry terms, with the payments concentrated onto commercial milestones rather than up-front fees so that the spin-out can conserve its cash in the early stages.

<sup>10</sup> Keys to the kingdom, Wong et al, Nature Biotechnology, 2015,  
<http://www.nature.com/biotec/2015/150201/full/bioe.2015.2.html>

academic equity stakes in this case will be reduced by dilution when shares are allocated to financial investors and management.

In Europe, the IP policy may describe the pre-investment division of equity between the academic founders and the HEI, but it is quite unusual for an HEI to specify how much equity the HEI would expect to receive after investment goes into the spin-out. Several UK universities (for example the University of Oxford, the University of Glasgow and the University of Reading) use a pre-investment equity split of 50:50 HEI:founder academic, but this is by no means universal. Elsewhere in Europe (for example at the University of Copenhagen and the École polytechnique fédérale de Lausanne), some universities do not support spin-out formation at all, and do not influence the equity stakes in the spin-out. Here, the founder academics' position is independently negotiated with any investors and entrepreneurs involved. In the US (for example at Stanford University), a more hands-off approach is often taken to spin-outs, and a (relatively small) fixed percentage may be taken in return for permission to spin-out the company, alongside a fully arms-length licence to the IP on full commercial terms. In the in-depth interviews we found a range of different approaches to spin-out formation in Ireland, with some HEIs taking a more active role, and others relying on external business mentors to work with the academic founders to build the business proposition and raise investment.

In the Irish HEI IP policies, insufficient detail is given about the circumstances surrounding the equity stakes described. Only seven policies give any information about the conditions under which the equity will be allocated, and these do not give enough detail to fully understand the process. In particular, there is no information about what the equity stake is given in return for. This could include: use of the HEI name, claim of "campus company" status, transfer of IP, reward for prior investment in funding and facilities to develop the technology, return for support given to found the company (for example developing the business plan, bringing on board mentors and executives, or raising finance), and/or financial investment into the spin-out.

For both the HEI and the founder academics, the more that they commit into the spin-out company, whether in the form of IP, time, effort or in-kind support, the greater the share of the equity they might expect to receive. This relates both to the development of the spin-out and, in the case of the academic founder, any future involvement in the company and their role in its future success. As will be discussed in section 6 relating to conflict of interest, where an academic founder has an ongoing role in the spin-out, this involvement should be managed to ensure that it does not compromise their ongoing role as an academic within the HEI.

In any consideration of equity shares or revenue returns, it is very unlikely that the HEI should seek to cover the full costs of the underlying research that went into a particular invention from the commercialisation revenues for that technology. On the one hand, the majority of research funding is to support the advancement of knowledge for its own sake, rather than for commercial gain, and on the other, research is a complex and lengthy business and uncoupling all the underlying sources of funding that may stretch back over many years is impossible. International practice in this area is not to recover the costs of research, but to place a fair commercial value on the proposition at the point that it is spun-out, which most often is at a very early, high-risk stage. The value of the opportunity on spin-out will also differ significantly from any sale value after a spin-out has been in operation for a number of years and the offering has been developed and de-risked.

**Every spin-out is unique, and there is no simple formula which can cover all the eventualities.** The list below gives a flavour of just some of the potential considerations which may influence the value of the spin-out, and the proportion of that value which should be ascribed to the HEI:

- When is the equity stake received? Is this before or after the first significant investment into the company?
- Will the equity stake be diluted by incoming investments, or will it be fixed until a certain level of investment has been received?
- What is being given in return for the equity?
- What is the stage of development of the underpinning IP? Is the opportunity ready for market, or is significant further development needed before a commercial product or service is available?
- Has the HEI helped to develop the business plan, find management, and/or raise funding for the spin-out?
- Will the spin-out be benefitting from the name and reputation of the HEI?
- What is the value of the technology in the marketplace? What level of income and profit would it expect to generate, over what timescale?

It is clear that the number of different considerations involved make the issue of spin-out valuations and allocation of equity shares very complex, which is why a formulaic approach is not suitable, and each case should be considered on its own merits. However, the current situation, where the majority of the HEI IP policies either do not address the issue at all or do not provide sufficient detail on the key elements to be considered, is not satisfactory and generates inconsistencies in approach both within and between HEIs. A set of common principles that should be considered when establishing the relative equity shares to be allocated on spin-out would help to bring more clarity and consistency of approach.

**KEY RECOMMENDATION:**

- **Common principles underpinning spin-out formation:** The individual circumstances surrounding the formation of each spin-out are too variable for fixed equity shares for the HEI or founders to be predetermined within the IP policy. However, there should be a set of common national principles that explain the basis upon which equity shares are taken and the consideration involved. KTI, in consultation with HEA and others, should lead the definition of these principles as part of the ongoing development of the national IP Protocol.

## 5 DECISION MAKING RELATING TO IP COMMERCIALISATION

Decision making relating to IP commercialisation is covered by some of the elements of requirement 4 of the IP Protocol Resource Guide (Protect IP arising from research Projects and Programmes), as well as requirement 6 (Conduct appropriate due diligence before licensing IP).

To supplement the gap analysis of the IP policies, we reviewed the decision making processes and procedures at each of the HEIs relating to management of IP commercialisation and conflict of interest arising, through collection of responses to a supplementary questionnaire.

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the policy identify specific HEI units or departments that are responsible for activities relating to IP commercialisation?	Yes	No												Only in unapproved draft								
Does the policy include information about decision-making processes for IP commercialisation?	Not fully / unclear																					

■ Yes ■ No ■ Not fully / unclear ■ Only in unapproved draft

All the HEIs identify within their IP policy the functions within the organisation which are responsible for carrying out IP assessment and commercialisation activities. In all cases, responsibility for day-to-day activities is delegated to the TTO or other dedicated professionals. These individuals have expertise in identification and assessment of commercial opportunities, patenting and other IP protection, good networks to enable them to identify suitable commercial partners, and negotiation skills to complete the deal. Many have a dual academic and industrial background, enabling them to understand the pressures and priorities of each side.

All of the HEIs (22) also include some information in their policy about the decision-making processes that are used during IP commercialisation. These should vary, depending on the type of decision involved. Some decisions can be delegated to the TTO, although it would be good practice for these to be considered jointly between members of the office, rather than taken by an individual. Using team meetings within the TTO to evaluate opportunities allows them to share experiences and expand their expertise. Certain decisions, however, have more significant potential implications relating to financial or reputational risk, and will typically involve a higher level of scrutiny. The table below

### DUE DILIGENCE ON LICENSEE COMPANIES

Before HEI 3 completes a licensing deal with a company, whether this is an internal spin-out or an unrelated company, they will complete a due diligence checklist to check that the company is suitable as a partner. This includes checking that the company is properly registered, is not in a business that might damage the HEI's reputation, that the Directors do not have any disqualifications or insolvencies, and that it has no outstanding financial obligations to the HEI. They will also ask for sales projections and a commercialisation plan, and check that this is realistic.

This process also formally considers whether there may be any issues surrounding conflict of interest, and if so, seeks to manage these.

shows some of the main decision points during IP commercialisation, and potential decision making processes for each, together with the number of HEIs which use each route. To avoid the potential for conflicts of interest, it is recommended that the decisions which attract higher risk levels should involve at least one senior executive of the HEI from outside the academic research hierarchy, either as a member of an approval committee or other ratification mechanism. This may be the TT Director (for larger more experienced offices), the relevant Vice President level individual in the TTO reporting line (typically the Vice President for Research & Innovation (VPRI), or equivalent), or by involving someone from an unrelated but relevant function, for example the Secretary or Financial Controller. The numbers of HEIs which take this approach are also highlighted in the table. These are the points where more comprehensive review and documentation of the rationale behind the decisions made and valuations agreed would be appropriate.

Decision process	Decision taken by	Comments
<b>Identification and IDF</b>	Researcher with TTO – 22 HEIs	
<b>Assessment of opportunity</b>	TTO – 17 HEIs IP committee – 5 HEIs	TTOs typically use a joint approach involving the Head of the TTO as well as the individual case managers.  May involve use of external experts, consultation with TTSI consortium members
<b>Decision on patenting</b>	TTO team or Head of TTO – 11 HEIs VPRI – 3 HEIs IP committee – 8 HEIs Involves a non-research senior exec – 10 HEIs	Commitment to costs, so documentation of decisions is recommended. This can be delegated to an experienced head of TTO, or ratified by another senior executive
<b>Decision on commercialisation route</b>	TTO with Researcher – 14 HEIs IP Committee – 8 HEIs	Often determined by background to research, existing partners and/or ambitions of researcher. Commercial experience of TTO is also often utilised.
<b>Agreement of licensing deal terms</b>	Led by TTO – 13 HEIs IP committee – 9 HEIs Involves a non-research senior exec – 17 HEIs	Negotiation parameters may be set by Head of TTO/VPRI or IP committee. Commitment to a specific financial return, so ratification by the TT Director or other senior executive and documentation of decisions (including how the fee was reached) is recommended.
<b>Approval to spin-out</b>	Led by TTO – 1 HEI TTO leads more formal approval process – 6 HEIs Committee approval – 12 HEIs Involves a non-research senior exec – 17 HEIs	Commitment to a higher risk strategy for the HEI, and with potential for conflicts of interest, so higher scrutiny (not just by the TTO) and full documentation of decisions is recommended
<b>Negotiation of spin-out deal structure</b>	Delegated to TTO – 7 HEIs Committee approval – 9 HEIs Involves a non-research senior exec – 17 HEIs	Negotiation parameters may be set by Head of TTO/VPRI or IP committee, or through spin-out approval process

It can be seen that **the majority of the HEIs are using appropriate decision making approaches**, and that the higher risk decisions are more likely to include wider consultation and approval. However, the decision-making processes for spin-outs are not specified by all HEIs, and they do not all include

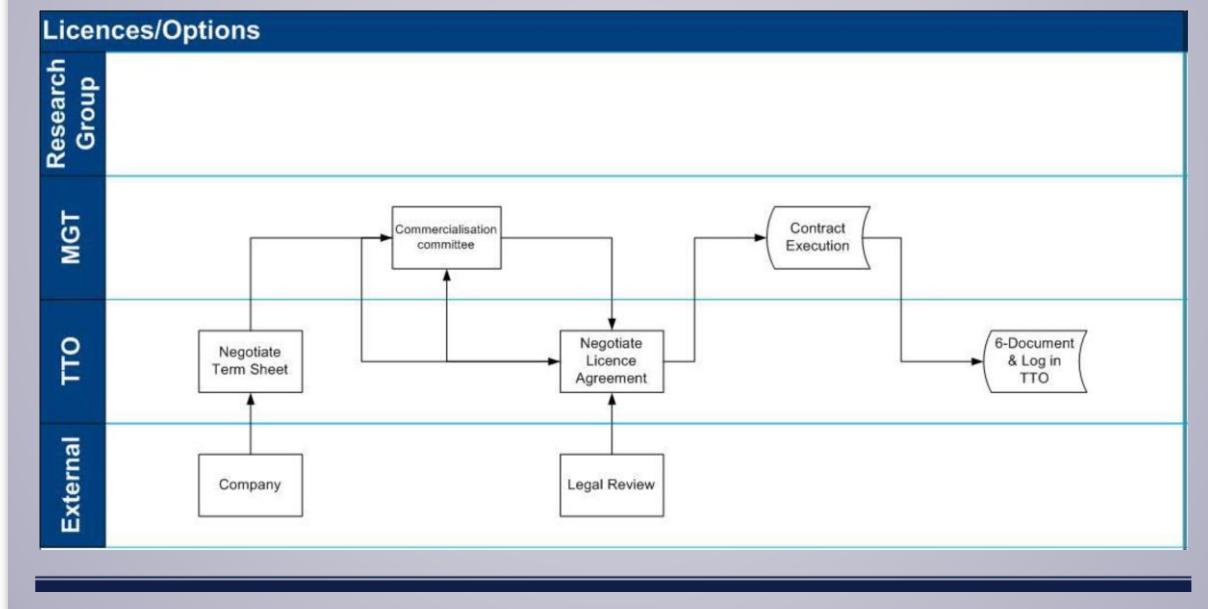
support for their decision-making from senior executives who are not part of the academic research hierarchy, and so removed from potential conflicts relating to research commercialisation.

## 5.1 DELEGATION OF DECISION MAKING FOR IP COMMERCIALISATION

The table above shows two broad approaches to the delegation of decision making in HEIs. Some have delegated authority for many decisions to their professional TTOs, whilst others use a formal IP committee to support their decision making. Some operate a mixed model, and will use the TTO for most decisions, but use a committee to support spin-out decisions. In all, 16 HEIs use a committee to support at least some of their decision making, and 8 HEIs, all of which are Institutes of Technology, delegate all major decisions to their IP committee. The process chart in the case study below shows a typical decision-making process for licensing in an HEI that uses a committee to support their decision-making.

### LICENSING PROCESS CHART

An example of a clear flow-chart from HEI 14 which describes the process of licensing, who carries out the activities, and where the decisions are made at each stage is illustrated below. This process is shown as an example only, which may be appropriate for the HEI in question, but is not necessarily suggested as being required across the HEI system.



There tends to be more delegation of decision-making to the TTO in those HEIs that have more mature TTOs with a good range of skills sets and higher activity levels. Often these offices will have employees drawn from a commercial background, and who are familiar with commercialisation. In addition, they may have staff who have attained the globally recognised Registered Technology Transfer Professional (RTTP) status. In less developed TTOs and/or those with a small staff complement, much of the decision making relating to IP and commercialising may be made via an IP committee or similar structure. These offices will often also use the wider resources in their TTSI consortium to provide expertise and advice. In all cases, what is delegated for decision making and

what needs to be referred to the committee or elsewhere should be detailed in the IP policy, but is not fully described in all cases.

Committees may be used by the HEIs in a variety of ways, including determining alignment with national and internal policy (2 HEIs), providing advice on commercialisation potential (1 HEI), scrutinising spin-outs only (5 HEIs), or making all commercialisation decisions, such as whether to patent, whether to enter a licensing deal, and to approve spin-outs (8 HEIs). If a committee is being used to make commercial decisions, then it is important that this does not delay the commercialisation process, and 4 HEIs use a flexible meeting schedule allowing the committee to be called as it is required, so avoiding delays. It is more appropriate, therefore, to use this type of structure in an HEI which has a low level of activity.

The membership of the committees tends to follow a similar structure, and as a minimum would be expected to include:

- A senior member of the TTO and/or the VPRI (15 HEIs)
- A senior executive who is not in the academic research hierarchy, such as the President, Financial Controller, Secretary, or other VP (13 HEIs)
- VPR and/or a representative from the School or Department of the inventor (14 HEIs)

Other members which may be used include external experts where appropriate, representatives from the incubator or start-up support, HR, or student representatives. The terms of reference of these committees should include a provision for members who have a potential conflict of interest relating to the commercialisation being discussed to declare and absent themselves from the decision, and be replaced by an alternative non-conflicted member as appropriate.

## 5.2 SPIN-OUT APPROVAL PROCESSES

As already discussed, 6 HEIs did not include detailed information about their spin-out approval procedures, either in their policies or their responses to the questionnaire. We found evidence from 16 HEIs of a more formal process for spin-out approval, which included review by other members of the HEI, as well as the TTO team:

- 8 HEIs use their IP committee
- 6 HEIs consult members of the senior executive team
- 2 HEIs use other Boards or committees

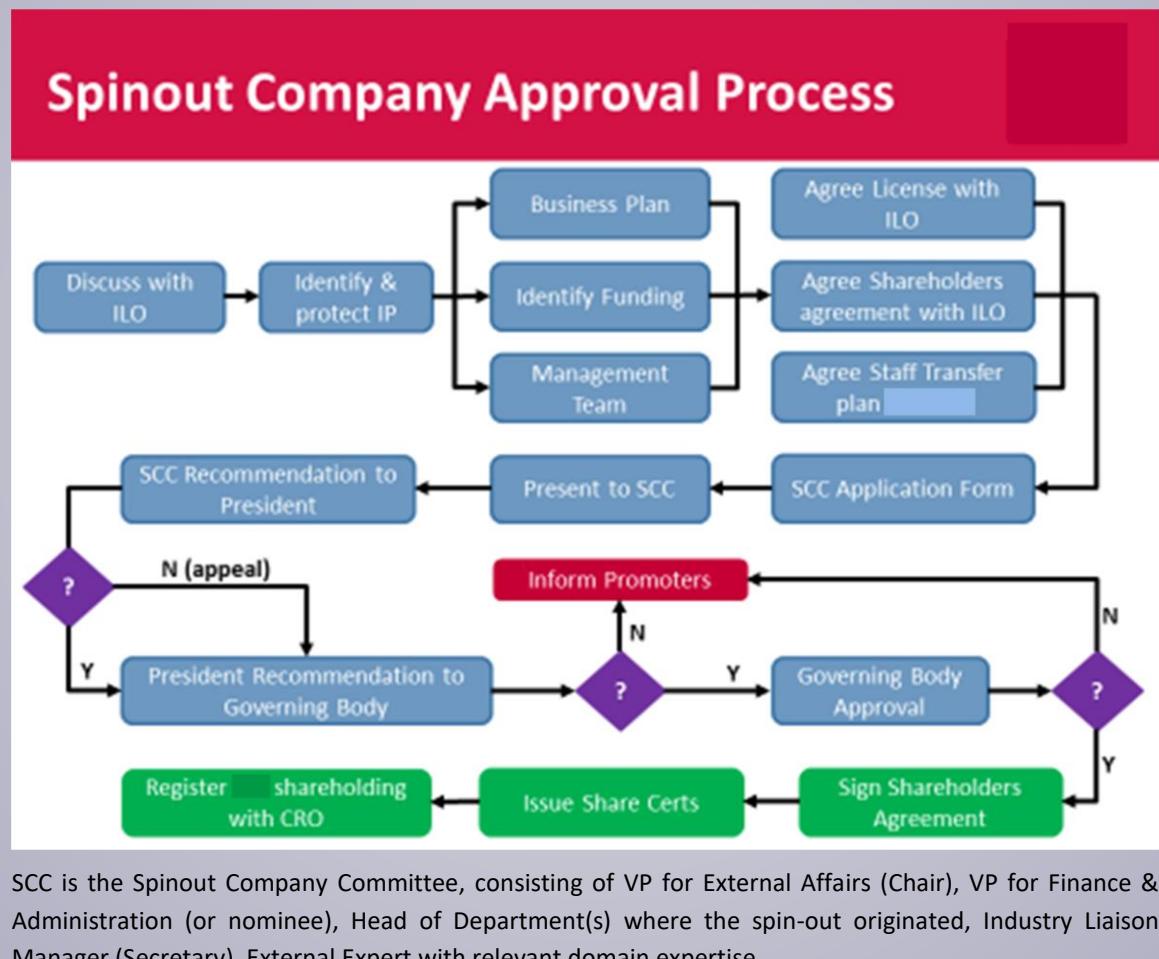
The details of the process vary, but typically include provision and consideration of an outline business plan which includes details of the proposed company, its management, shareholdings and initial financing, the nature of the relevant HEI IP and licensing arrangements, the business model, competitive positioning and evidence of proof of concept, and proposed future involvement of the founding academics and use of HEI facilities and other resources. Seven of the HEIs reported a formal consideration of potential conflicts of interest and how these should be managed as part of their spin-out approval process. This type of IP management procedure helps to support the more general conflicts of interest policies which will be discussed in the next section, by highlighting and avoiding possible conflicts before they can occur.

In 3 cases, final approval to spin-out must be obtained from either the President or the Governing Body, in other cases final approval may be given by the committee (9 HEIs), or by the VPRI (2HEIs) or TTO (1 HEI).

It is important that all HEIs have a clear and well documented process for approval of their spin-out companies, and that these processes are both well-considered and suitably swift given that there is often a time-sensitive commercial imperative. Where a detailed process was described, the information was generally well laid out, but **too many of the HEIs lacked detail or any information at all about how the spin-out process will be managed.**

#### SPIN-OUT APPROVAL PROCESS CHART

An example of a clear flow-chart from HEI 21 which describes the process of spin-out approval, and where the decisions are made at each stage is illustrated below. This process is shown as an example only, which may be appropriate for the HEI in question, but is not necessarily suggested as being required across the HEI system.



**KEY RECOMMENDATION:**

- **Clear decision-making and dispute resolution processes:** All IP policies should include a clear description of decision-making processes relating to IP commercialisation, with a dispute resolution process. Certain decisions such as spin-out formation or significant asset realisation should involve at least one senior executive HEI decision maker who is not part of the academic research hierarchy, for example the Secretary or Financial Controller.

## 6 CONFLICT OF INTEREST RELATING TO IP COMMERCIALISATION

The potential for conflict of interest exists in all aspects of HEI operations, including research, teaching, assessment, staffing, administration, and commercial activity. As the interactions between HEIs and other organisations increase, it becomes more important that there is no actual or perceived opportunity for staff to benefit inappropriately from their association with the HEI. Conflicts of interest are not wrong in themselves, and cannot always be avoided or prohibited. The most effective way to address unavoidable conflicts of interest is to develop procedures which mean a staff member cannot be placed into a position of conflict, alongside a system under which members of staff disclose, evaluate and manage any potential conflict that does arise. In the context of IP commercialisation, some examples of where this type of conflict of interest might arise would include:

- where a researcher holds shares in a spin-out company, but may also be in a position to influence decisions relating to ongoing collaborative research between the HEI and the spin-out
- where it is proposed to license HEI technology to a company which is owned by a family member of the creator of that technology
- where a decision is being made on distribution of equity in a spin-out company between the HEI and creator, but the creator is part of the normal decision-making process for spin-out approval

We gathered the Conflict of Interest policies from each of the HEIs, and carried out a gap analysis on their contents. In the gap analysis, we were comparing the policies against the following elements which would be expected to be found in a best practice conflict of interest policy:

Well publicised and easily accessible	Regularly reviewed	Defines what types of conflict are covered
Clearly defines responsibilities of researchers to report	Identifies chain of reporting up to and including President	Clearly states how approach to manage conflict will be decided
Includes a mechanism to monitor implementation	Includes records of conflicts and management approaches	Explains decision making and dispute resolution

We also looked for evidence that the HEIs were meeting the recommendations provided by the HEA on governance in universities and institutes of technology in Ireland, as outlined in section 2.1., and requirement 8 of the IP Resource Protocol Guide to manage conflicts of interest. Conflict of interest is a governance issue, and the HEIs interviewed were all well aware of its importance to an ethical and transparent institution, and were taking the issue seriously and trying to address it in a series of ways.

Management of conflict of interest is a challenging area, especially as conflicts may occur in many other aspects of academic life, and are not confined to the responsibility of a single academic unit. Conflicts relating to IP commercialisation are only one aspect of this. As discussed in the Introduction (section 2.1), this review only considers conflicts relating to IP commercialisation, and not those relating to other aspects of HEI activity.

## 6.1 CONFLICT OF INTEREST POLICY AVAILABILITY

In the tables which follow, grey boxes are used where an HEI does not have a relevant policy, and so is not able to address the question within it.

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the RPO have a Code of Conduct (/Conflict of Interest policy) for employees?																						
Is this policy(ies) public (can we find it on their website/through internet searching?)																						

Yes   
  No   
  Not fully / unclear   
  Only in unapproved draft   
  No policy to analyse

**The documentation surrounding Conflict of Interest is significantly less well organised and more fragmented than the IP policies.**

**Availability:** the majority of HEIs (17) provided a current Code of Conduct or Conflicts of Interest (CoI) policy. Only 11 of these could be accessed publicly online<sup>11</sup>; and these are not all easy to find and do not all include version control or latest review date.

Five other HEIs did not have a formal CoI policy, but did provide some guidance in other policies and procedures. In all, a further 33 documents and 3 draft documents were provided across the 22 HEIs that gave some information relating to conflict of interest, bringing the total number of documents provided to 52. These documents are described in section 6.2 below. Two HEIs did not provide any other policies beyond their IP policy; both have confirmed that they are planning to draft and introduce a Conflicts of Interest policy.

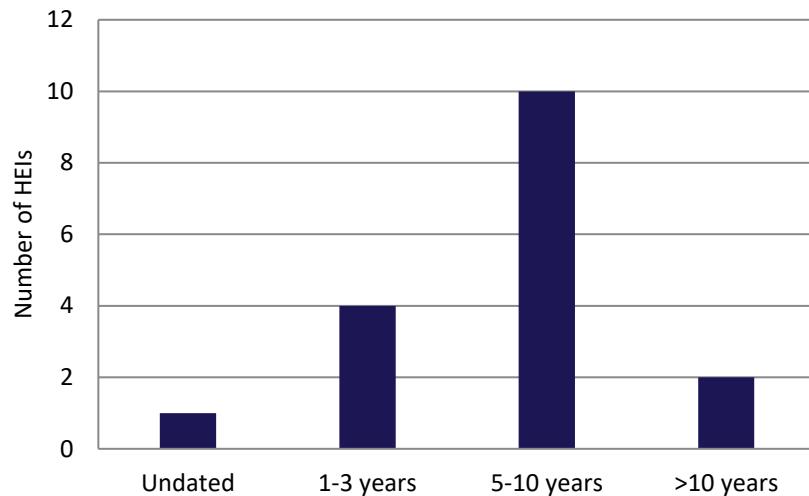
In the analysis, we have focused on the major policy documents, and have supplemented this where possible with information from the supplementary documents provided. However, there may be some inconsistencies which arise where we have not been able to readily locate the relevant information source for a specific question.

**Updating:** the majority of HEIs (15) do not specify how often their policies will be reviewed or updated. Two state that they will be reviewed annually; however none of the policies have been updated in the last year. Some of the HEIs are reviewing or planning to review their policies once the results of this and related reviews become available.

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<sup>11</sup> As at September 2017

## Age of Conflict of Interest policies



**Policy ownership:** There was less clarity for the conflict of interest on who was responsible for these documents. Four stated this was led by HR, four by the VPRI or TTO, and one by the Secretary. As with the IP policies, the ultimate approval level required before formal introduction of a new policy is either the Governing Body (9 HEIs), the Academic Council (1 HEI), or the Executive Committee (1 HEI).

### KEY RECOMMENDATIONS:

- **Dedicated conflict of interest policy:** Every HEI should have a single Conflict of Interest policy which is easily and publicly available on their website, regularly reviewed, and approved by the Governing Body. This should include reference to actual and potential for conflicts relating to IP commercialisation and their management and should point to the detailed information and processes outlined in the HEI IP policy which are designed to mitigate many such conflicts.
- **Triggers for policy review:** Automatic review of the Conflict of Interest policy should be triggered if there is a significant change in national policy and guidance, for example within six months of the introduction of updates to the Code of Governance.

## 6.2 RELATED DOCUMENTS

The following non-exhaustive list describes the subject matter of the additional documents which were provided by the HEIs which relate to conflict of interest:

- Academic Policy
- Campus Company Policy
- **Code of Conduct**
- Code of Governance
- Code of Practice for Research Degree Programmes
- Conflict of Commitment policy
- **Conflict of Interest Policy**

- Conflict of Interest Relating Specifically to Technology Transfer Agreements
- Consultancy Policy
- Disclosure Policy
- Double Employment Policy
- Ethics and Standards in Public Office
- External Work/Activities Policy
- Grievance Procedure
- Policy for Private Consultancy and External Commercial Work
- Policy on Financial Management of Externally Funded Research & Scholarship Activity
- Policy on Good Research Practice and Regulations on Outside Earnings
- Policy on University Consultancy and Directorships
- Regulations on Outside Earnings
- Research & Consultancy Policy & Procedures
- Spin Out Company Policy Statement.
- Standard Employment Contract
- Third Party Contract Research
- “Whistleblower” policy

This array of potential sources of information on how to identify, disclose and manage conflicts of interest in different situations is clearly very confusing for the academic staff, and difficult for the HEI to coordinate. In some organisations, different types of conflict may be covered in different documents, with different reporting and management procedures. As recommended in section 6.1 above, a single policy document with a consistent approach would be preferable.

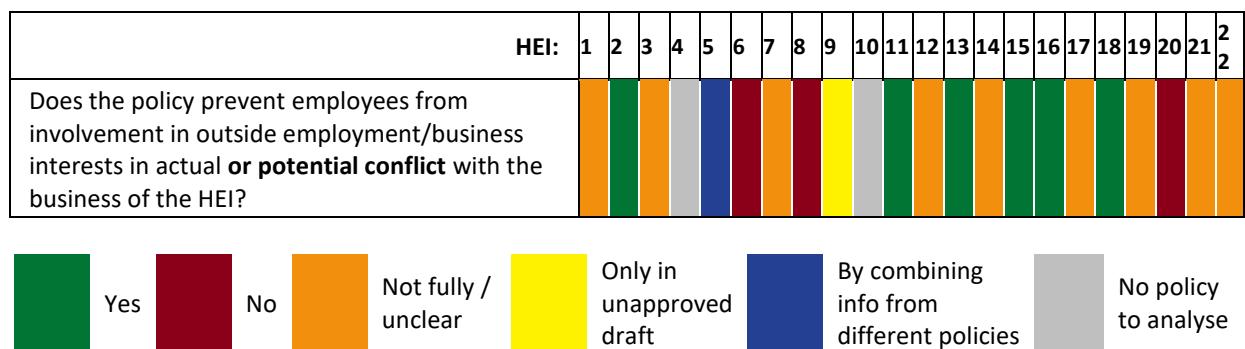
We found significant confusion amongst those providing information to this study in terms of which documents may be relevant to these issues within their organisation. Although all HEIs should have a Code of Conduct in place, not all were aware that this would cover the principles of integrity and behaviour which may arise in cases of conflict of interest. This reinforces the confusion around conflicts, and is an area of concern.

In terms of the hierarchy of documentation in place, all HEIs will have a Code of Governance, which refers to a Code of Conduct governing appropriate behaviour. This Code of Conduct lays out principles of behaviour, but does not include details of procedures to be followed, which would be covered in more detailed policy documents for relevant areas. In this case, these policy documents should be the IP policy and the Conflicts of Interest policy, which should all cross-reference one another to ensure that it is clear what information a researcher needs to understand their responsibilities. **Each HEI would be expected to have all four of these documents in place.**

### 6.3 KEY POLICY ELEMENTS

Requirement 8 of IP Protocol Resource Guide requires the HEI to manage conflicts of interest (relating to commercialisation of IP). In the tables which follow, a blue box is used when the question is only fully addressed by combining information from more than one document.

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the COI policy refer specifically to conflicts of interest relating to IP commercialisation and/or external work?																						
Does the IP policy refer to conflict of interests relating to IP?																						



It is important that each HEI has a clear policy relating to conflicts as they arise in respect of IP and commercialisation. This is best referenced in one central and easy to find policy, and it is more appropriate for this to be the IP policy in the case of conflicts relating to commercialisation of IP. At present more of the HEIs (15) mention conflicts relating to IP in their IP policy than do in their CoI policy (10 HEIs). The main CoI policy for the HEI should direct researchers to the IP policy, and vice versa, and there should be a common approach for identifying, reporting and management of conflicts which should be consistent across all types of potential conflict.

### SEPARATION OF DECISION-MAKING

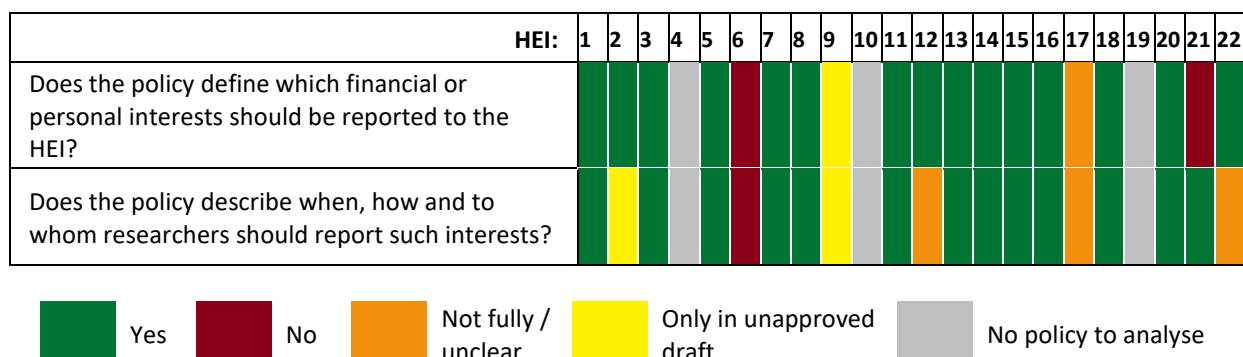
In one of the HEIs, a recent reorganisation of the decision-making structure for IP commercialisation decisions has been introduced. A new executive post of Director of Research & Innovation was created with authority to approve the majority of IP commercialisation decisions. The TTO reports through this position, which is part of the Academic Services Division, whilst the researchers report through the Academic Faculty Deans. This automatically removes the opportunity for a number of different types of conflict relating to IP, by ensuring that the researchers cannot be directly involved with making or influencing decisions regarding the commercialisation of their IP.

The requirement to prevent employees from involvement in outside interests in actual or potential conflict with the business of the HEI derives from the template Code of Conduct provided in the 2012 Codes of Governance for universities and for IoTs. The six HEIs marked in green (for this question 3 in the table above) specify that there may be specific circumstances which are not permitted. The nine marked in amber allow for disclosure and management of conflicts, but do not prohibit activity. None of the HEIs include the full wording from the 2012 template Code, and it seems unreasonable that all **potential** conflicts should be prohibited, so long as there is a mechanism to ensure that these are properly addressed. In the new draft Codes of Governance proposed for introduction in 2018, similar wording has been retained confirming the management of conflict of interest as a responsibility of the Governing Body.

Although policy is an important part of the governance structure, another way in which an HEI can manage this type of conflict is by putting in place robust IP management processes which prevent the conflicts from arising in the first place. We found several examples of this within the HEIs, some of which are described in the case study sidebars.

**KEY RECOMMENDATION:**

- Awareness of potential conflicts of interest within IP commercialisation:** The IP policy should clearly describe the potential for conflicts of interest arising within IP commercialisation and how the IP management policy and procedures support their avoidance or management. It should also direct researchers to the relevant section in the Conflicts of Interest policy.

**6.4 REPORTING OF POTENTIAL CONFLICTS**

Over half of the HEIs (15) provide some guidance to their staff on the types of IP conflicts which should be reported. **In all cases the responsibility for identifying and reporting conflicts of interest is placed on the individual member of staff.** There are a number of different possibilities as to who should receive the report of the potential conflict, including the individual's line manager (4 HEIs), their Head of Department (7 HEIs), the TTO (4 HEIs), a specified Vice President or President (5 HEIs), or "the Institute" (1 HEI). There is also a clear expectation that if the person with the conflict is themselves in this chain of reporting, they should report to the next higher authority, which could include the Governing Body in the case of a conflict involving the President.

**SPIN-OUT PROCEDURES**

At HEI 21, the spin-out procedure requires formal consideration of potential conflicts and a staff transfer plan (if staff are moving into the spin-out) to be provided as part of the documentation for approval of the spin-out. The founders must sign to signify their agreement with the conflict management plan proposed, and to declare that they will comply with a series of constraints, for example that they will not engage directly in collaborative research with their own spin-out.

Five HEIs supplement this self-reporting mechanism by asking the researchers to submit annual declarations of any conflicts, which may be linked to a wider consideration of any external activities.

In general, we found that there seems to be a disconnect between top level governance acknowledgement and ownership of the need to avoid potential conflicts, and the placing of the responsibility onto the individuals for compliance. This was also highlighted in the responses to this

study, which in nearly all cases were received from the TTO or VPRI or their equivalents, despite the much wider potential applicability of the conflicts of interest policy across other HEI functions.

## 6.5 MANAGEMENT AND RECORDING OF POTENTIAL CONFLICTS

HEI:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Does the policy describe what actions will be taken following reporting of potential conflicts?	Yes	No	Not fully / unclear	Only in unapproved draft	By combining info from different policies	No policy to analyse																
Does the policy describe options for resolving or managing potential conflicts?	Yes	No	Not fully / unclear	Only in unapproved draft	By combining info from different policies	No policy to analyse																
Does the policy describe the recording mechanisms for management of reported conflicts?	Yes	No	Not fully / unclear	Only in unapproved draft	By combining info from different policies	No policy to analyse																

Legend:  
 Yes  
  No  
  Not fully / unclear  
  Only in unapproved draft  
  By combining info from different policies  
  No policy to analyse

Although the mechanisms for reporting conflicts of interest are reasonably well described, there is much less information available about the next steps. **Only seven HEIs provide complete information about the actions to be taken following reporting of conflicts, how they may be resolved, or where decisions will be recorded.** Several HEIs appear to operate a policy of “report and forget”. This may be partly because responsibility falls between different departments, with a lack of clear ownership at senior levels. HEI 14 is proposing to introduce a more formal reporting mechanism, using a Conflicts Register, which will be maintained and audited at least annually, and reported to the Governing Body each year.

Again, there is no standardised approach to who will be involved with proposing and approving the conflict management approach to be taken. This may be agreed by the line manager, VPRI, IP Committee, Conflicts Committee, TTO, HR, VP Corporate Affairs or President. Approval may be from the line manager, President, VPRI, Senior Executive team, VP Corporate Affairs or Head of School.

In the in-depth interviews, we found that a pragmatic rather than an official approach is taken to many conflicts. As part of the normal IP commercialisation processes, the TTO and the researcher would together identify where potential conflicts may arise and formulate a strategy to avoid them, which would often involve discussions with the individual’s Head of Department, or HR as appropriate. Although effective decisions may be reached through this approach, they are rarely formally recorded.

The most common approach to conflict management is to separate the staff member from decision-making responsibility relating to their interest. They may be replaced by their line manager, or by the TTO or by someone else in an unrelated department. In all the in-depth interviews, the responsibility for negotiation of the terms of IP commercialisation deals lies with the TTO, and may be overseen by the IP committee, so there is no opportunity for the researcher to influence the

university decision-making in this regard. Similarly, the HEIs will use a consistent, arms-length costing and negotiation mechanisms for access to HEI facilities and incubator space for all companies, whether spin-outs or external. Some HEIs include a formal consideration of potential conflicts of interest and of commitment as part of their spin-out and/or licensing procedures; this may include official approval of the management mechanisms by an individual's line manager or Head of School. These are all examples of the elements of good IP management practice which are used within the TTOs to help the researchers to avoid being placed in a position of potential conflict in the first place.

Four HEIs have set up a specific conflicts committee, which advises on strategy and policy, and can consider the management of specific cases which are referred to them. Three HEIs can use their IP committee to consider conflicts relating to IP. For the HEIs interviewed in-depth, these mechanisms do not seem to be well used in these institutions, with decisions taken instead at a more operational level.

It has been suggested that one way to avoid conflicts of interest for researchers in senior management positions would be to prevent these individuals from being involved in spin-out activities. This would be an extreme reaction, and would be counter-productive to the aims of the national research commercialisation policy of supporting and encouraging further commercialisation activity. To promote a culture of commercial activity, this must be seen to be valued and an important factor in promotion and tenure decisions, rather than a block to an academic career, and senior researchers who are successful role models can play an important part in this.

In practice, we found that realistic and appropriate approaches are generally being taken within the HEIs to manage potential conflicts of interest relating to IP commercialisation. This is encouraging, but unless it is backed up by robust recording and monitoring mechanisms, there is no way to demonstrate at a later date that the methods used were suitable. The pragmatic approach seems to have developed through the lack of clear guidance from senior leadership, and confusion or insufficient detail surrounding questions of conflict of interest. It would be appropriate for the Governing Body to be more involved in review and monitoring of the procedures in place. The aim should not be to stifle or avoid commercialisation activity, but to ensure that it is managed in an open, transparent and professional way. Clear and simple documentation will be an important first step in this transformation.

### **NEGOTIATION OF SPIN-OUT TERMS**

In HEI 17, there is a clearly defined approach to handling conflicts of interest in relation to spin-outs. The HEI will usually not negotiate with their founder researchers, but requires a third party such as a CEO or mentor associated with the spin-out to be involved in all instances, so ensuring that the researcher cannot be placed in a position of conflict.

**KEY RECOMMENDATION:**

- **More robust governance and management of conflict of interest:** Whilst responsibility for recognising and avoiding conflicts of interest should remain with the individual, HEIs must take more responsibility at a senior level to put robust procedures in place to identify, manage and record the approach taken to avoid or manage conflicts of interest. A summary of all potential conflicts reported and management mechanisms put in place should be reviewed by the Governing Body at least annually.

## **7 CONCLUSIONS AND RECOMMENDATIONS**

In this study, we found a strong foundation of good practice, particularly for management of IP commercialisation, but nevertheless also identified a number of areas where policy and implementation could be further improved.

All of the 22 HEIs studied have approved policies in place for IP management, and employ experienced technology transfer or dedicated professionals to implement these policies. Not all of these policies can be accessed publicly as required in the national IP Protocol. Public availability is important to give confidence to external stakeholders that suitable policies are in place, as well as to make it simple for the academics to find information about their responsibilities. A lack of timely and formal updating in several cases is also of concern, and undermines the authority of the older policies.

All 22 HEIs have IP policies that cover the key elements of IP ownership, definitions, the fundamental responsibilities of researchers, and describe when and how an invention may be patented and commercialised. There were discrepancies in other elements of the policies, including some practices which are not in step with good international practice, or which are not fully addressed by the policy. Whilst a single IP policy for all HEIs in Ireland may not be achievable, a common framework which specifies the minimum components that would be expected to be found in every IP policy would help to ensure that all the policies cover the basic requirements.

Of the 22 HEIs, 20 have a revenue share policy which divides the revenue into three parts, as specified in the IP Protocol Resource Guide. Irish HEIs tend to be a little less generous to their researchers and protect their institutional interests to a greater extent than their UK counterparts. Whilst the broad principles of revenue sharing are covered by all the HEIs, there is a lack of detail surrounding some of these mechanisms, which could lead to misunderstandings. The relative contributions from multiple creators of intellectual property should also be determined and agreed on disclosure of the idea to the HEI to prevent later disagreements, and revisited prior to commercialisation to take into account any additional contributions since the initial disclosure.

Every spin-out is unique, and there is no simple formula which can cover all the options surrounding allocation of equity shares in the company. However, the current situation, where the majority of the HEI IP policies either do not address the issue at all or do not provide sufficient detail on the key elements to be considered is not satisfactory, and generates inconsistencies in approach both within and between HEIs. A set of common principles that should be considered when establishing the relative equity shares to be allocated on spin-out would help to bring more clarity and consistency of approach.

Many of the HEI IP policies do not detail the procedures and decision-making processes surrounding spin-out formation, and others relegate this information to a separate campus company policy. Where a detailed process was described, the information was generally well laid out, but too many of the HEIs lacked detail or any information at all about how the spin-out process will be managed. Comprehensive information should be supplied in a single document to make it simple for the researcher to understand what is involved in spinning out a company, and how to navigate the approval processes.

All the HEIs identify within their IP policy the functions within the organisation which are responsible for carrying out IP assessment and commercialisation activities. The majority are also using appropriate decision making approaches, in which higher risk decisions include wider consultation and approval. However, these higher risk decisions do not always involve senior executives who are not part of the academic research hierarchy and so are removed from potential conflicts relating to research commercialisation.

Conflict of interest is a governance issue, and the HEIs interviewed were all well aware of its importance to an ethical and transparent institution, and were taking the issue seriously and trying to address it in a series of ways. The documentation surrounding conflict of interest is significantly less well organised and more fragmented than the IP policies, and also suffers from irregular updating and difficulties with access. Fewer HEIs have formal conflict of interest policies, with no common approach to ownership and implementation of these policies.

Each HEI would be expected to have four interlinked documents in place, with cross-references to ensure that it is clear what information a researcher needs to understand their responsibilities. These are an overall Code of Governance, which refers to a Code of Conduct governing appropriate behaviour. This Code of Conduct lays out principles of behaviour, but does not include details of procedures to be followed, which would be covered in this case by the more detailed IP policy and conflicts of interest policy.

In all cases the responsibility for identifying and reporting conflicts of interest is placed on the individual member of staff. There seems to be a disconnect between top level governance and this responsibility at an individual level. This was also highlighted by the devolution of the responses to this study to the TTO or VPRI, despite the much wider potential applicability of the conflicts of interest policy across other HEI functions.

Although the mechanisms for reporting conflicts of interest are reasonably well described, there is much less information available about the next steps, with only seven HEIs providing complete information about the actions to be taken following reporting of conflicts, how they may be resolved, or where decisions will be recorded.

Policy is an important part of the governance structure, but another way in which an HEI can manage this type of conflict is by putting in place robust IP management processes which prevent the conflicts from arising in the first place. In practice, we found that realistic and appropriate approaches are taken within the HEIs to manage potential conflicts of interest relating to IP commercialisation, but these are not well recorded. It would be appropriate for the Governing Body to be more involved in review and monitoring of the procedures in place. The aim should not be to stifle or avoid commercialisation activity, but to ensure that it is managed in an open, transparent and professional way.

### **Recommendations:**

- 1. Single IP policy:** Every HEI should have a single IP policy covering all major commercialisation routes, including spin-outs, to make it simple for researchers to understand the processes and their obligations. This policy should be easily and publicly available on their website, regularly

reviewed (at least every 4 years) through internal consultation, and approved by the Governing Body. The date of review and approving body should be recorded on the policy.

2. **Common IP policy framework:** KTI, in consultation with HEA and others, should support consistency across IP policies by working with the HEIs to develop and agree a framework of minimum components to be included in every IP policy, reflecting the requirements of the current national IP Protocol. Where groups of HEIs have similar procedures, a common policy format is preferred.
3. **Clear decision-making and dispute resolution processes:** All IP policies should include a clear description of decision-making processes relating to IP commercialisation, with a dispute resolution process. Certain decisions such as spin-out formation or significant asset realisation should involve at least one senior executive HEI decision maker who is not part of the academic research hierarchy, for example the Secretary or Financial Controller.
4. **Common principles underpinning spin-out formation:** The individual circumstances surrounding the formation of each spin-out are too variable for fixed equity shares for the HEI or founders to be predetermined within the IP policy. However, there should be a set of common national principles that explain the basis upon which equity shares are taken and the consideration involved. KTI, in consultation with HEA and others, should lead the definition of these principles as part of the ongoing development of the national IP Protocol.
5. **Clarity on revenue share mechanisms:** Revenue share mechanisms should be clearly described in the IP policy for both revenue from licensing and equity realisation, and for equity share, and must conform to the national IP Protocol. This should include consideration of how royalty revenues received from any spin-out companies in which a researcher is a significant shareholder will be distributed.
6. **Determination of creator contributions at initial disclosure:** The relative contributions from multiple creators of intellectual property should be determined and agreed between the creators in writing as part of the invention disclosure process, and confirmed before commercialisation.
7. **Awareness of potential conflicts of interest within IP commercialisation:** The IP policy should clearly describe the potential for conflicts of interest arising within IP commercialisation and how the IP management policy and procedures support their avoidance or management. It should also direct researchers to the relevant section in the Conflicts of Interest policy.
8. **Dedicated conflict of interest policy:** Every HEI should have a single Conflict of Interest policy which is easily and publicly available on their website, regularly reviewed, and approved by the Governing Body. This should include reference to actual and potential for conflicts relating to IP commercialisation and their management and should point to the detailed information and processes outlined in the HEI IP policy which are designed to mitigate many such conflicts.
9. **More robust governance and management of conflict of interest:** Whilst responsibility for recognising and avoiding conflicts of interest should remain with the individual, HEIs must take more responsibility at a senior level to put robust procedures in place to identify, manage and record the approach taken to avoid or manage conflicts of interest. A summary of all potential conflicts reported and management mechanisms put in place should be reviewed by the Governing Body at least annually.
10. **Triggers for policy review:** Automatic review of each policy should be triggered if there is a significant change in national policy and guidance, for example within six months of the introduction of updates to the national IP Protocol or Code of Governance.

## APPENDIX 1: METHODOLOGY

### TERMS OF REFERENCE

KTI and the HEA wish to commission an international expert in the commercialisation of IP from the HEI sector to undertake an independent review with the following terms of reference:

- **IP Policies:** Review current IP policies across all the HEIs including:
  - Documenting the range and scope of these IP policies including, but not limited to, reference to where these policies are available, dates of publication and frequency and methodology for review and update, key elements covered in the policies, mapping policies against major commercialisation routes eg patenting, licensing, spin-outs, external work etc.
  - Identifying any gaps in the suite of policies and/or within specific policies
  - Documenting revenue share, including any policy on equity share, as described within these policies to ensure that this is consistent with the national IP Protocol's Management Requirement No. 9 requiring RPOs to implement systems for the sharing of income from the commercialisation of IP within the RPO, including with the HEI contributors to the IP
- **IP Management Systems:** Review internal IP management systems within all HEIs including:
  - Documenting the IP management systems currently in place including:
    - Gathering process maps of all key internal decision-making processes and decision-makers and, as applicable, the HEI business units involved regarding IP commercialisation activity such as IP protection, licensing and spin-out company formation;
    - Understanding the structure and membership of all key committees and other decision-making structures related to IP commercialisation decision-making and their relationship with the overall management and governing structures (including the Governing Authority) of the institution including, but not limited to, documenting the terms of reference for these committees, membership, frequency of meetings and any related process maps
  - Assessing the extent to which these meet the National IP Management Requirements
  - Identifying any gaps in best practice
- **Conflict of Interest (COI):** Examine relevant codes and policies relating specifically to conflicts of interest in respect of IP and commercialisation in place in HEIs and whether such procedures meet the relevant HEI Code of Governance in relation to the management of actual or perceived conflicts of interest, including:
  - Documenting the codes and policies and whether these are stand-alone or embedded within other policies
  - Documenting whether such codes and policies are published and their location
  - Identifying any gaps
  - Gathering process maps for reporting of conflicts of interest including the understanding the process of review of reported conflicts of interest and which function(s)/role-holder(s) is/are involved in that review, taking into account all grades of HEI staff including senior management

- **In-depth Analysis of Implementation:** Consider the IP practices in a sample of 5 higher education institutions (agreed in advance with KTI and the HEA) to assess compliance with the national IP Management requirements including:
  - Review and document the availability of published policies and procedures that cover timely identification of IP arising from research, protection of this IP including the maintenance of laboratory records and the prevention of premature public disclosure of IP.
  - Review of awareness of IP policy and conflict of interest requirements at senior management and researcher level including documenting:
    - Availability of IP and COI policy and practice documents and guidance
    - New staff induction processes related to IP and COI
    - Relevant information-sharing, training or development activities to ensure staff have capability and knowledge to apply good IP practice;
  - Review and document the practices in place to:
    - Encourage researchers to promptly notify the HEI Technology Transfer Office (or equivalent) whenever IP with commercialisation potential is identified
    - Evaluate IP that may have potential commercial value to establish, as far as possible, what the commercial value might be and how that value might be realised.
    - Decide what form of protection is appropriate for each new item of IP and to undertake that protection
    - Identify, for each item of IP for which protection is sought and/or which will be commercialised, the originating individual(s), within the HEI or elsewhere, any Background IP used in its development and the sources of research funding, and associated obligations, from which the IP is derived.
    - Identify, for each item of IP for which patent protection is sought, the individual(s), within the RPO or elsewhere, to be named as Inventor(s) or, where design or other registered rights are sought, the originator of the subject matter of the right.
    - Ensure that all staff, contractors and consultants, assign to the HEI all rights to IP arising from their research for or on behalf of the HEI and that arrangements are in place for the assignment of rights to the HEI for research arising from research Projects with industry undertaken by students
- **Conclusions and Recommendations:** Draw conclusions on the availability, extent of coverage and implementation of IP policies including the adherence to the national IP Management requirements across the HEI sector. Identify any gaps and make recommendations on any changes that should be implemented. This should include recommendations on best practice regarding management of conflict of interest as it relates to IP and commercialisation of research. It should also consider the ongoing monitoring arrangements that should be put in place.

## APPROACH

In compiling this report IP Pragmatics used the following methods:

- Discussions with the Steering Group from KTI and HEA to gather background information and review background documents
- Review of IP policies, codes of conduct, conflict of interest policies, and related guidance documents provided by the HEIs within Ireland
- Consultation by email and telephone with the Vice Presidents of Research (or equivalent) and other representatives of the HEIs
- In-depth interviews with the Vice Presidents of Research (or equivalent), Head of the Technology Transfer Office (or equivalent) and other representatives of the five HEIs selected for detailed examination of the implementation of their policies
- Existing knowledge of the authors of the different approaches to IP management and management of conflicts of interest at similar HEIs in the UK, Europe, USA and Australia
- Published information on IP management and management of conflict of interest from selected UK and European universities

This study considered the policies and procedures in place at 22 HEIs in Ireland. These were:

- Dublin City University
- Maynooth University
- National University of Ireland Galway
- Trinity College Dublin
- University College Cork
- University College Dublin
- University of Limerick
- Athlone Institute of Technology
- Cork Institute of Technology
- Dublin Institute of Technology
- Dun Laoghaire Institute of Art, Design & Technology
- Dundalk Institute of Technology
- Galway-Mayo Institute of Technology
- Institute of Technology Blanchardstown
- Institute of Technology Carlow
- Institute of Technology Sligo
- Institute of Technology Tallaght
- Institute of Technology Tralee
- Letterkenny Institute of Technology
- Limerick Institute of Technology
- Waterford Institute of Technology
- National College of Art and Design

Current IP policies and current Code of Conduct and/or Conflict of Interest policies, along with other related policies giving relevant guidance were provided by HEA and KTI. Initial contact was made with the Vice President of Research (or equivalent) at each of the 22 HEIs. These individuals were asked to provide further details of their processes for IP management and for resolving conflicts of interest (particularly relating to IP commercialisation). A template questionnaire was used to gather information, and 17 HEIs provided written responses to this questionnaire. A further 2 HEIs provided answers in a telephone call, and 3 HEIs provided their answers as part of the in-depth interview process.

The responses were largely coordinated by the TTO (11 HEIs) or the VPRI (9 HEIs), with 2 responses from the Head of Research.

We carried out a desktop review of the areas covered by these policies and procedures to identify areas of coverage and any gaps compared with:

- the recommendations provided by KTI in the IP Protocol Resource Guide;
- the recommendations provided by the HEA and the Irish Universities Association in the Governance of Irish Universities 2012;
- the recommendations provided by the HEA in the Code of Governance of Irish Institutes of Technology 2012;
- and with international good practice.

Five HEIs were chosen by the Steering Group at KTI/HEA to be analysed in depth to understand their compliance in this area with the national IP management requirements, and to investigate how their policies and procedures are put into practice. This looked beyond the factual analysis carried out in the previous part of the study, to understand whether the level of expertise, oversight and decision-making scrutiny that is used in these organisations is appropriate and suitable. We took the specific local environment within Ireland into account, whilst also learning from appropriate comparable organisations elsewhere in the world. The five HEIs were chosen to be representative across the spectrum of HEIs, and to be more active in terms of IP commercialisation and so likely to have more comprehensive and better tested systems already in place.

The initial contact points for this part of the study were the Vice President for Research (or equivalent). However, in all cases, the interviews and visits were coordinated by the Vice President for Research & Innovation and/or the head of the Technology Transfer Office. The interviews involved members of the TTO, the VPRI (or equivalent), and in some cases the VPR, the Research Office, the Secretaries Office, the audit team and/or the Academic Secretary. The information was gathered through a series of face-to-face interviews and one telephone interview, supported by the collection of relevant internal documents and office manuals.

## ACKNOWLEDGEMENTS

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## APPENDIX 2: NATIONAL RESEARCH COMMERCIALISATION POLICY

The national policy on research commercialisation was originally formulated in 2012 by a specific Policy Group with representatives from the higher education sector, funders, and cross-departmental government agencies. It was set out in the original IP Protocol<sup>12</sup>: “Putting public research to work for Ireland, Policies and procedures to help industry make good use of Ireland’s public research institutions”, and has been re-stated in the updated 2016 version of the IP Protocol “Inspiring Partnership – the national IP Protocol 2016. Policies and resources to help industry make good use of public research in Ireland”.

The policy states:

1. Ireland aims to provide an exemplary innovation ecosystem that creates economic and societal benefits. This includes the promotion of entrepreneurship, high potential startups and job creation by new and established firms. An essential condition for this is a user-friendly system that enables industry and the public research sector to work well together and which encourages the commercialisation of all forms of Intellectual Property ('IP') arising from publicly-funded research.
2. In encouraging industry and RPOs to work together, the State's aims are:
  - For Ireland and its centres of research excellence to be the partner of choice and to be optimally attractive for industry to engage with the academic community in research Programmes.
  - For such Programmes to assist enterprises in researching, developing, validating and testing new technologies/products/platforms in ways that will lead to commercialisable assets.
  - To deepen industry's R&D base in Ireland.
  - To engage Ireland's SMEs in innovation to ensure their long-term sustainability.
  - To grow and develop the research excellence and expertise of Ireland's academic research community.
  - Ultimately to deliver a return to the Irish economy, aligned to evolving national priorities.
3. Where commercially exploitable IP arises as a result of State funding for research and development, the opportunity shall be taken to commercialise the IP in all possible Fields, applications and territories where it is consistent with achieving Ireland's objectives.
4. The purpose of this commercialisation, from Ireland's point of view, is to maximise the economic and societal benefits and returns to Ireland from its public investment in research.
5. The primary objective of commercialisation is the creation of sustainable jobs in Ireland. This is the most important form of economic and societal benefit.
6. Where the potential for job creation in Ireland is limited or non-existent, the aim is commercialisation elsewhere that will lead to wealth flows and benefits to Ireland.
7. All enterprises, from start-ups and small and medium enterprises ('SMEs') to multi-national corporations, can easily access this IP. Companies and research performers should be able to

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<sup>12</sup> <https://www.enterprise-ireland.com/en/Research-Innovation/Companies/IPP-Putting-public-research-to-work-for-Ireland.pdf>

access and exploit IP quickly, on terms that provide fair value to all parties, and in ways that are predictable and consistent from one negotiation to the next.

8. Commercialisation shall also, as far as possible without compromising these policy statements, benefit the Higher Education Institutes and State-funded Research Organisations (“Research Performing Organisations”, RPOs) and provide incentives to the Researchers involved in creating the IP. These benefits include not only opportunities for RPOs to share financial rewards but also the promotion of greater industry involvement in RPO research, leading to new research Programmes, increased funding for RPOs and the stimulus of greater industry interaction for individual Researchers.
9. All those involved in commercialisation of IP, RPOs and industry alike, should seek to build networks of long term knowledge sharing relationships, reflecting the ecosystem nature of innovation.
10. Where there are opportunities to commercialise the IP arising from RPO research, then all parties shall pursue commercialisation of that IP in a timely manner.
11. RPOs shall pursue commercialisation, keeping in mind the objective to create economic and societal benefit for Ireland through the creation of sustainable jobs. This can be achieved in a number of ways, including: – Creating licensing opportunities for all types of enterprise, thereby creating employment and a more competitive and sustainable economy in Ireland. – Supporting the creation of spin out companies, with the potential for job creation in Ireland. – Attracting and maintaining foreign direct investment in Ireland, with its potential for economic growth and job creation.
12. In some situations, RPOs will need to decide which of these three mechanisms takes precedence, making informed judgments about which specific approach will maximise overall economic and societal benefits for Ireland.
13. RPOs shall aim to maximise the benefits of commercialisation to Ireland rather than focusing exclusively on the benefits to the RPO. They should build relationships with industry that will support a sustainable flow of commercialisation outputs, rather than seeking to maximise the returns from individual transactions.
14. RPOs shall have policies and procedures in place that are publicly published and enable them, to the extent that is reasonable, to give industry an acceptable and consistent level of confidence around the management of IP arising from their research. These policies and procedures shall include arrangements for good planning, governance and execution of research Programmes and publications, with particular attention to the management and commercialisation of IP.

**APPENDIX 3: ACRONYMS AND ABBREVIATIONS USED IN THE REPORT**

<b>Acronym</b>	<b>Description</b>
Col	Conflict of Interest
HEA	Higher Education Authority
HEI	Higher Education Institution
IDF	Invention Disclosure Form
ILO	Industrial Liaison Office
IoT	Institute of Technology
IoTI	Institutes of Technology in Ireland (forerunner to THEA)
IP	Intellectual Property
IUA	Irish Universities Association
KTI	Knowledge Transfer Ireland
PI	Principal Investigator
RPO	Research Performing Organisation
THEA	Technological Higher Education Association
TTO	Technology Transfer Office
TTSI	Enterprise Ireland's Technology Transfer Strengthening Initiative Programme
VPR	Vice President for Research
VPRI	Vice President, Research & Innovation