

# Building and sustaining a knowledge transfer system – examples from Ireland

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4.6 M population

## 1.6% GDP spent on R&D



#### Source OECD





€732M HERD Source Forfas 2011

### €531M RPO research expenditure Source AKTS 2014







## National Policy

## Ireland's TT policy & practice timeline

Pre-2000	Higher Education Agency (HEA), Irish Research Council (IRC), Enterprise Ireland (EI), IDA Ireland
2000	Science Foundation Ireland established
2006	Strategy for Science, Technology and Innovation
2007	Technology Transfer Strengthening Initiative 1 (TTSI1)
2012	TTSI2
2012	National IP Protocol issued
2014	KTI launched
2015	National IP Protocol updated New Strategy for Science, Technology and Innovation

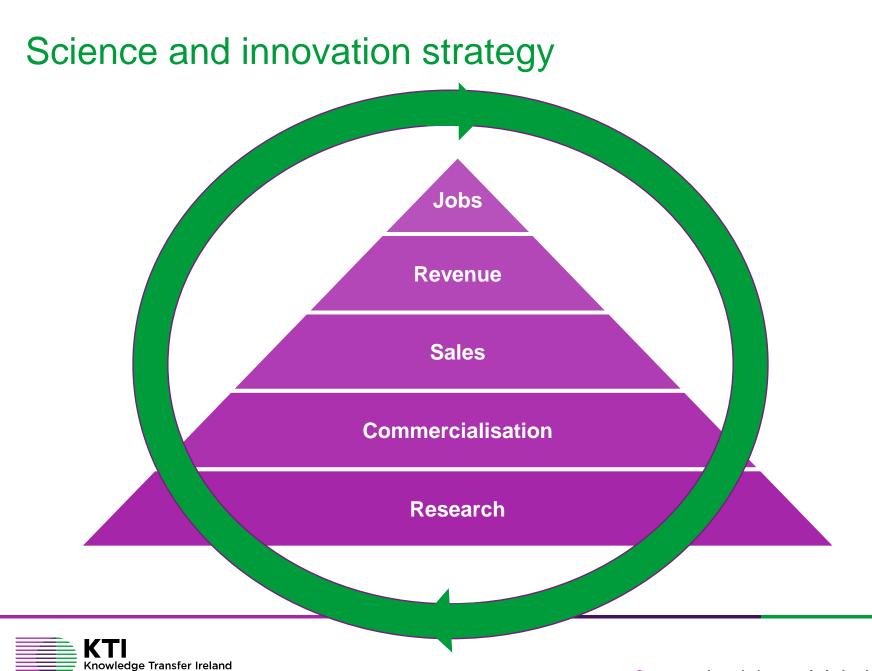


## The National IP Protocol 2012



- Framework for industry to access public research
- Mandated the creation of a central Technology Transfer Office – KTI
- Living document



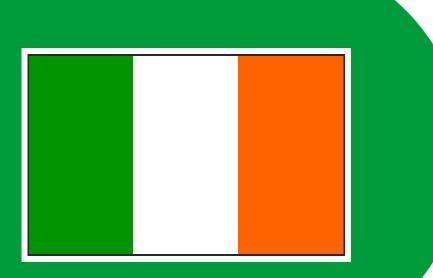


Where Research & Business Connect

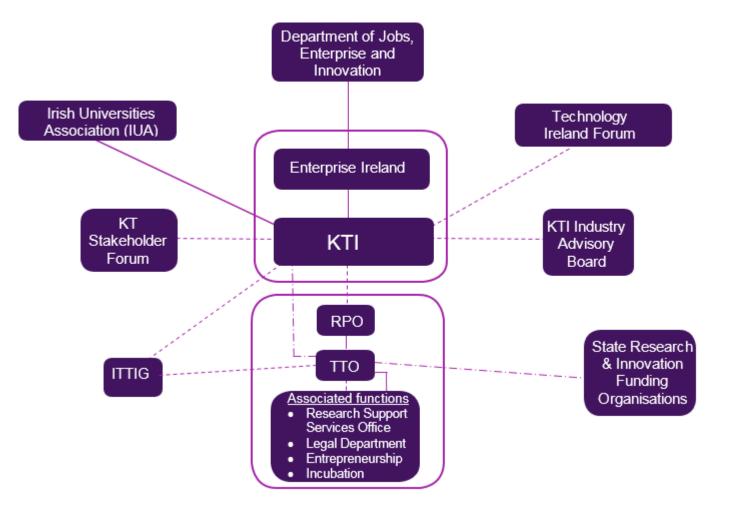
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## Innovation ecosystem



## The KT/TT ecosystem





### Innovation ecosystem – influencers & actors







## About KTI

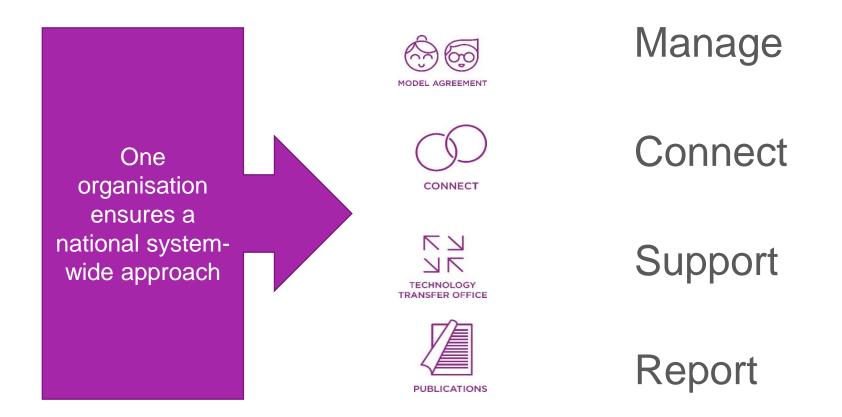
### Mission

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.





## A centralised function to support and strengthen knowledge transfer in Ireland







## Manage: national funding for tech transfer

## The EI Technology Transfer Strengthening Initiative (TTSI)

## TTSI1 2007-12

- € 30M to develop Ireland's national technology transfer system
- 10 Technology Transfer Offices funded
- Funding for:
  - 32 new posts
  - operational costs

## TTSI2 2013-16

- €22M to scale the tt system
- 8 TT consortia of universities and Institute of Technology across Ireland





## The TTSI programme

- Managed by KTI
- Direct support for TTOs/KTOs
- Programme cycle:
  - Proposal, evaluation, award
  - Mid- and end of programme monitoring
- Performance against targets
  - Quarterly & Annual reporting
- System KPI
  - AKTS



## Evaluation of TTSI1 (Frontline Consulting)

## **TTSI1** highlights

During the programme

- LOA increased 7 fold
- Spin-outs increased 450%
- Culture change
- Skilled profession developed
- State was able to measure activity





## Ecosystem funding available to support commercialisation from research

ТҮРЕ	FROM
Proof of concept: Commercial Feasibility Commercialisation grant TIDA	Enterprise Ireland Enterprise Ireland SFI
Collaborative research awards with industry: Innovation Vouchers Innovation Partnerships Technology Centres (R&D) Enterprise Partnerships Research Centres & Spokes Strategic Partnerships	Enterprise Ireland Enterprise Ireland Enterprise Ireland IRC SFI SFI
Industry Fellowships – academia and industry	SFI
Employment based postgraduate programme	IRC
TT infrastructure - TTSI	KTI





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RESEARCH IN IRELAND ABOUT KTI

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HOW TO WORK WITH HEIS

**GUIDE TO AGREEMENTS** 

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#### Knowledge Transfer Ireland

Knowledge Transfer Ireland takes a national perspective on the knowledge transfer (KT) system in Ireland. KTI works with business, investors, universities, Institutes of Technology, State research organisations, research funders and government agencies to maximise State funded technology, ideas and expertise getting into the hands of business to drive innovation.

Read More >>



**Find Your Research Partner** Find Expertise & Research Partners for Companies in Ireland

**Browse Research Providers** Locate your HEI & Research Centre in order to access Knowledge

N How to Engage with HEI's NГ

Step by Step Guide on How to Engage with Research Providers

#### WHAT PEOPLE ARE SAYING ABOUT KT IN IRELAND



66 I've been actively involved in commercialising technologies from number of Irish universities since 2008. We've built a company based on licensed technology which was developed in university laboratories and made available to us by the Technology Transfer Office. We are confident it will grow into a substantial business which would not have been possible if the college had not developed the core technology. We received a lot of support from the university Technology Transfer Office and have found it to be a rewarding experience on many levels.

Alan Phelan CEO/NucleusVP Group





**Directory of Research Centres** 

and Technology Centres 2015

An Rolen Post, Floritar ages Nudialochta Department of Jobs, Enterprise and Innovation

#### **Research prioritisation in Ireland**

Having made very significant progress over the past decade in building Ireland's research capability, the Government decided that Ireland needed to build on the strengths that have emerged from the investment to date in science, technology and innovation.

In order to target investment in areas that link detectly to current and likely future economic and societal needs, a teering group was formed to undertake a national reasanch prioritization exercise. This group was asked to make recommendations for the future orientation of public investment in science, technology and innovation. It identified 40 priority areas of meascrit that are most likely to give demonstrable economic and sociated return, and where inland should locus the majority of competitive funding. Four orbein were used in adecting the 14 priority areas for four chains were used in adecting the 14 priority areas for

future, competitively-awarded investment for economic objectives

- 1. the area is associated with a large global market or
- markets in which irish-based enterprises already compete or can realistically compete;
- publicly performed R&D in Ireland is required to exploit the area and will complement private sector research and innovation in Ireland.
- 1. treland has built or is building (objectively measured)
- strengths in research disciplines relevant to the area; and, 4. the area represents an appropriate approach to a
- recognised national challenge and/or a global challenge to which ireland should respond.

The Steering Group also identified the need to support platform technologies and infrastructure which underplinithe priority areas and acknowledged the critical importance of research for policy and research for knowledge.

#### Who is involved in research prioritisation?





### Developing the system: best practice



Tony Hickson, Imperial Innovations KTI symposium on spin-out company creations, 2014







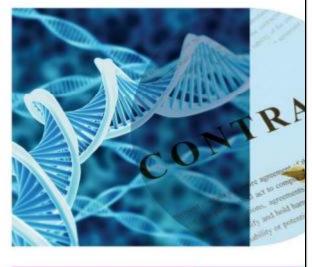
### KTI Practical G Confidentiality Agreements

## KTI Practical Guide Licence Agreements



### KTI Practical Guide Legal Issues in Contracts with Research Performing Organisations









#### (1) [Full legal name of the RPO]

and.

(2) [Full legal name of the Licensee]

#### MODEL EXCLUSIVE LICENCE AGREEMENT

#### MODEL EXCLUSIVE LICENCE AGREEMENT

This Agreement dated	20[+] is between:
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- [•] (the "RPO"), [an academic institution incorporated under [statute in ireland]], whose [principal address or registered office] is at [•]; and
- (2) (\*) [LIMITED][INC.] (the "Licensee"), a [company incorporated in (\*) under registration number), whose [principal place of business or registered address] is at (\*).

#### Background:

- A. The RPO has developed certain technology and owns certain intellectual property rights relating to (•), including the IP and the Know-how.
- B. The Licensee wishes to acquire rights under the IP and to use the Know-how for the development and commercialisation of Licensed Products in the Field and in the Tierritory, all in accordance with the provisions of this Agreement.

#### The Parties agree as follows:

#### 1 Definitions

1.1 Definitions. In this Agreement, the following words shall have the following meanings:

Affiliate	In relation to a Party, means any entity or person that Controls, is
	Controlled by, or is under common Control with that Party.
Endery Event	A breach by a Party and/or its Affiliates and/or their respective officers, directors, employees and representatives of the Prevention of Corruption Acts 1838 to 2010 and/or any corresponding anti-bribery or anti-corruption
	legislation in the Territory.
Claims	All demands, claims and "lability (whether chimnal or chill in contract, tort (including negligence) or otherwise) for losses, damages, legal costs and other expenses of any nature whatsoever and all costs and expenses (including legal costs) incurred in connection therewith.
Commencement Date	(+). (a) All IP and Know-how; and
Information	<ul> <li>(b) All other technical or commercial information that:</li> <li>(i) In respect of information provided in documentary form or by way of a model or in other tangbile form, at the time of provision is marked or otherwise designated to show expressly or by necessary implication that it is imparted in confidence;</li> <li>(ii) In respect of information that is imparted orally, any information that the Disclosing Party or its representatives informed the Receiving Party at the time of disclosure was imparted in confidence; and</li> </ul>
	(II) any copy of any of the foregoing.



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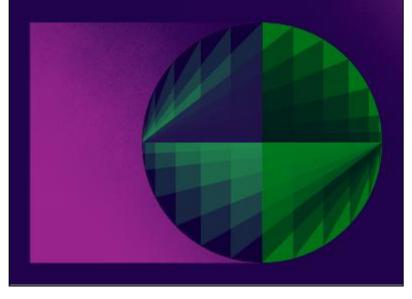


## Performance monitoring & system KPI



### BUILDING. SHARING.

Annual Report and Annual Knowledge Transfer Survey 2014







#### PRODUCTS ON THE MARKET



new products were launched on the market in 2014 as the result of a licence from an RPO. This is consistent with the previous year's figure of 31 new products available for consumer or commercial use.



#### BUSINESSES ENGAGED IN RESEARCH AGREEMENTS



the number of different companies RPOs worked with in collaborative or contract research programmes, which is a 46% increase over the previous year.



RESEARCH AGREEMENTS



new collaborative and contract agreements signed in 2014.

RESEARCH AND CONSULTANCY AGREEMENTS

2,337

new agreements (collaborative and contract research and consultancy) were signed with companies, representing a 46% increase from 2013.

#### LICENCES/OPTIONS/ ASSIGNMENTS (LOAs)

168

there was a continued increase in the number of LOAs signed to 168, up 21% from the previous year.



COLLABORATION WITH IRISH SMEs



of research agreements (contract and collaborative research) with the SME sector were with linsh SMEs.



COMPANY LOCATION



of companies working with RPOs on research agreements (contract and collaborative research) were based in Ireland.



COLLABORATION WITH IRISH MNCs



of research agreements (contract and collaborative research) with the MNC sector were with Irish-based MNCs.



INVENTION DISCLOSURES



new invention disclosures, a decrease of 9% from 2013.



SPIN-OUTS



new spin-out companies were formed, a drop of 27% on the previous year.

ACTIVE SPIN-OUTS

97

active spin-outs, thriving at least three years postincorporation at the end of 2014, an increase of 21% on the number at the same time the previous year.

#### CONSULTANCY AGREEMENTS



the number recorded has dropped by 23% on the previous year to 407.



PRIORITY PATENT APPLICATIONS



patent applications were filed, which is consistent with the previous year.



INCUBATOR FACILITIES



companies incubated in HEI incubator facilities.



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# International trends

## KTI commissioned study on KT policy & practice: 7 Small Advanced Economies (*Technopolis, 2015*)

- KT is seen as a public good
- There is a case for ongoing public support for KT
- Most countries have come to see KT as a valid cost centre
- Successful national KT systems develop over time
  - Most schemes are now in their second or third 'generation'
- Countries are placing more weight on monitoring and evaluation
- The 7 countries have chosen different approaches to supporting KT, reflecting underlying conditions



### One size does not fit all

- Models: At least two distinct types of national approaches have been shown to perform well
  - A distributed approach in Denmark and Israel universities to drive KT
  - A coordinated approach in Ireland, Scotland and New Zealand, where national resources are made available to individual KTOs
- Scale: KT is more cost-effective where there is a large research base to draw from.
  - In some systems, where there are large universities, institutional TTOs dominate; in countries where there are larger numbers of small universities, there is more collaboration and national structures
- History and culture: Israel has an established tradition of pursuing knowledge transfer, whereas in other countries, 'traditional' academic culture is more entrenched and a KT 'culture' needs to be built up



## Professionalism of knowledge transfer

- KT is increasingly seen as a distinct profession
- International bodies include: EARMA, AUTM, PraxisUnico, ASTP-Proton, Finnovation
- International credentialing
  - Alliance of TT Professionals <u>http://attp.info/</u>



 These examples suggest that there is an increasing focus and understanding of KT globally





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