



*Excellence with Impact: Science Foundation Ireland's
Research Funding Strategy & Programmes*

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FUJITSU INNOVATION GATHERING, 30th May 2013



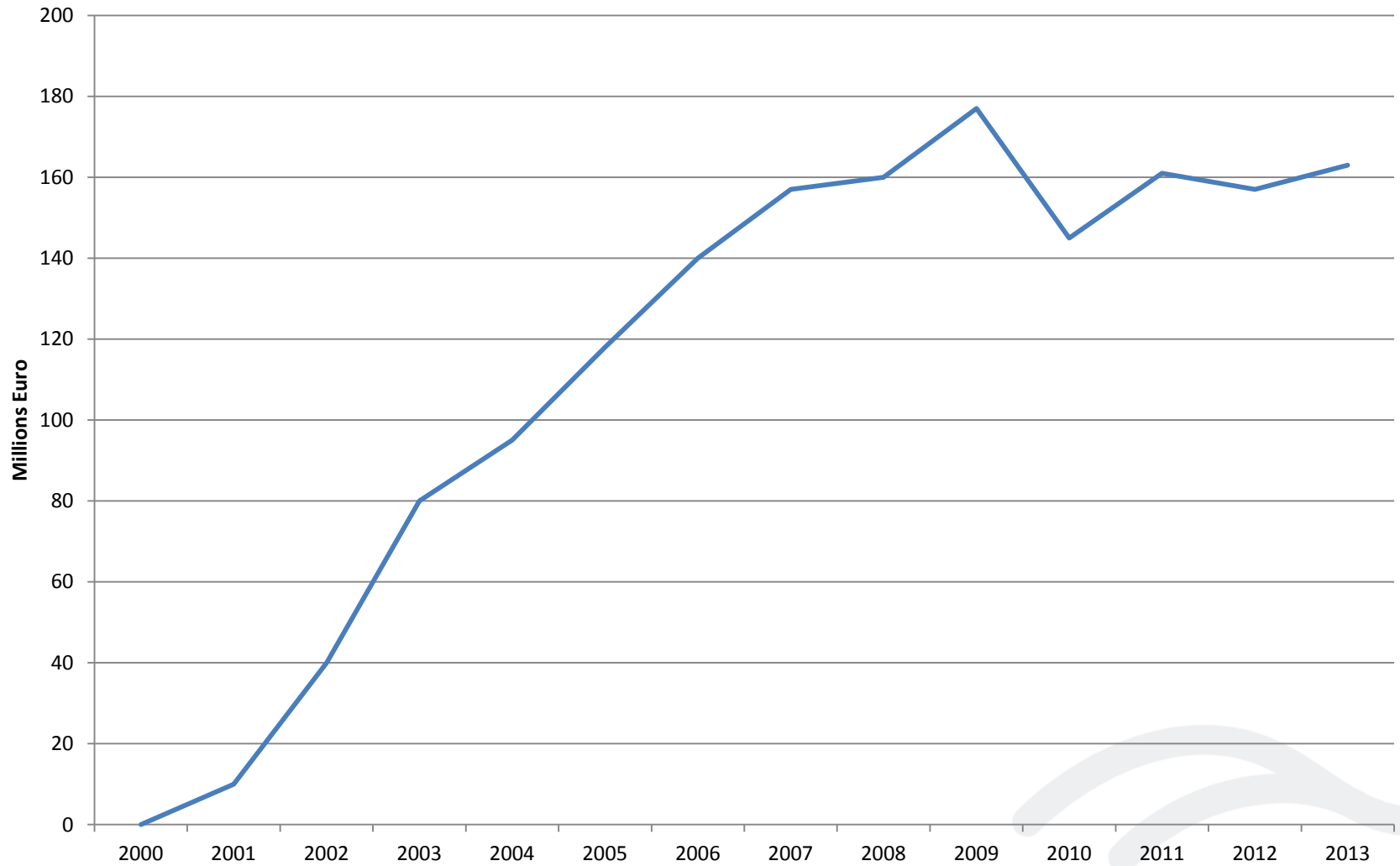
Science Foundation Ireland

“SFI WILL BUILD AND STRENGTHEN SCIENTIFIC AND ENGINEERING RESEARCH AND ITS INFRASTRUCTURE IN THE AREAS OF GREATEST STRATEGIC VALUE TO IRELAND’S LONG TERM COMPETITIVENESS AND DEVELOPMENT.”

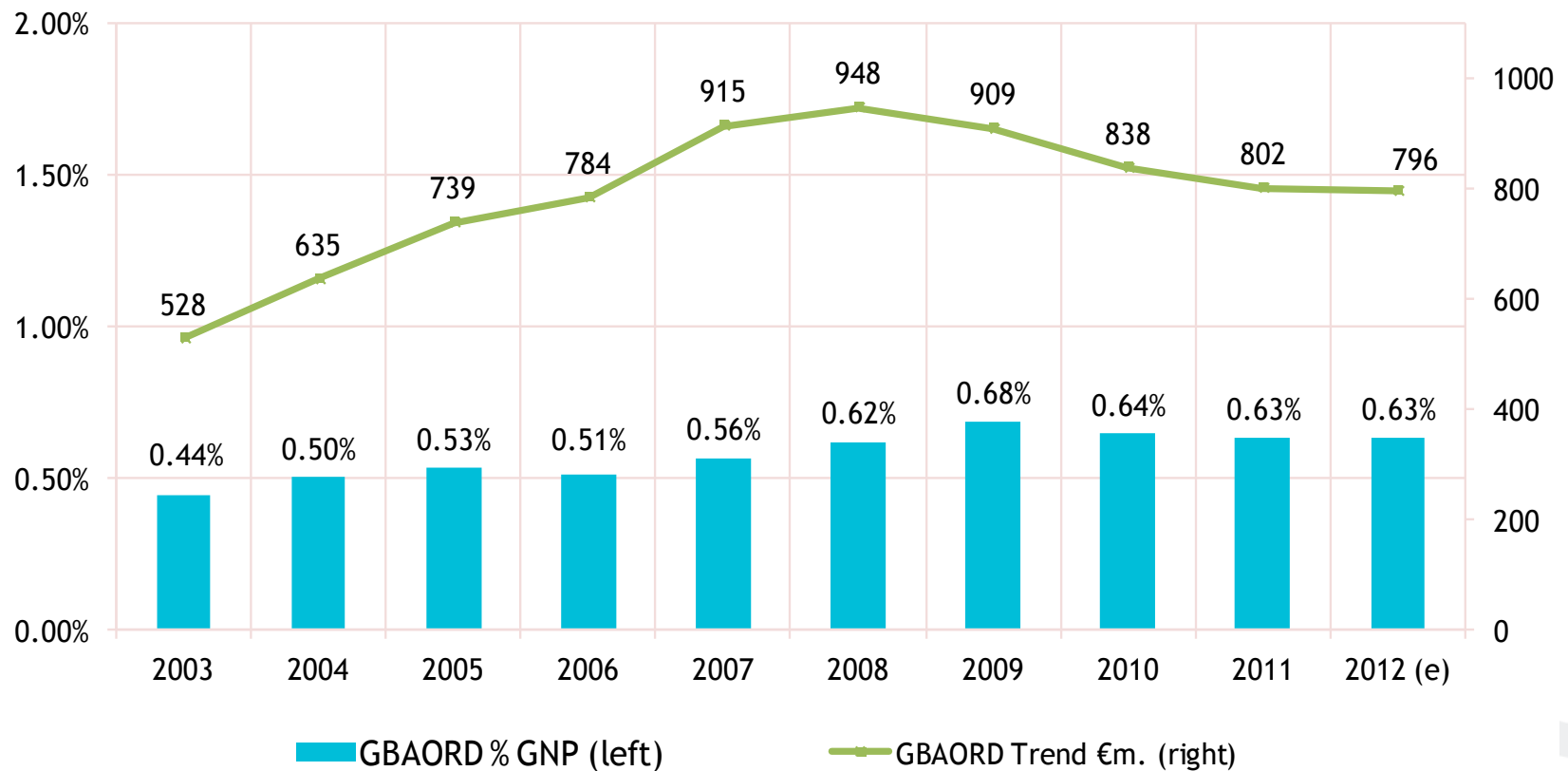
- **Founded 12 years ago**
- **> €1.5 billion committed to date**



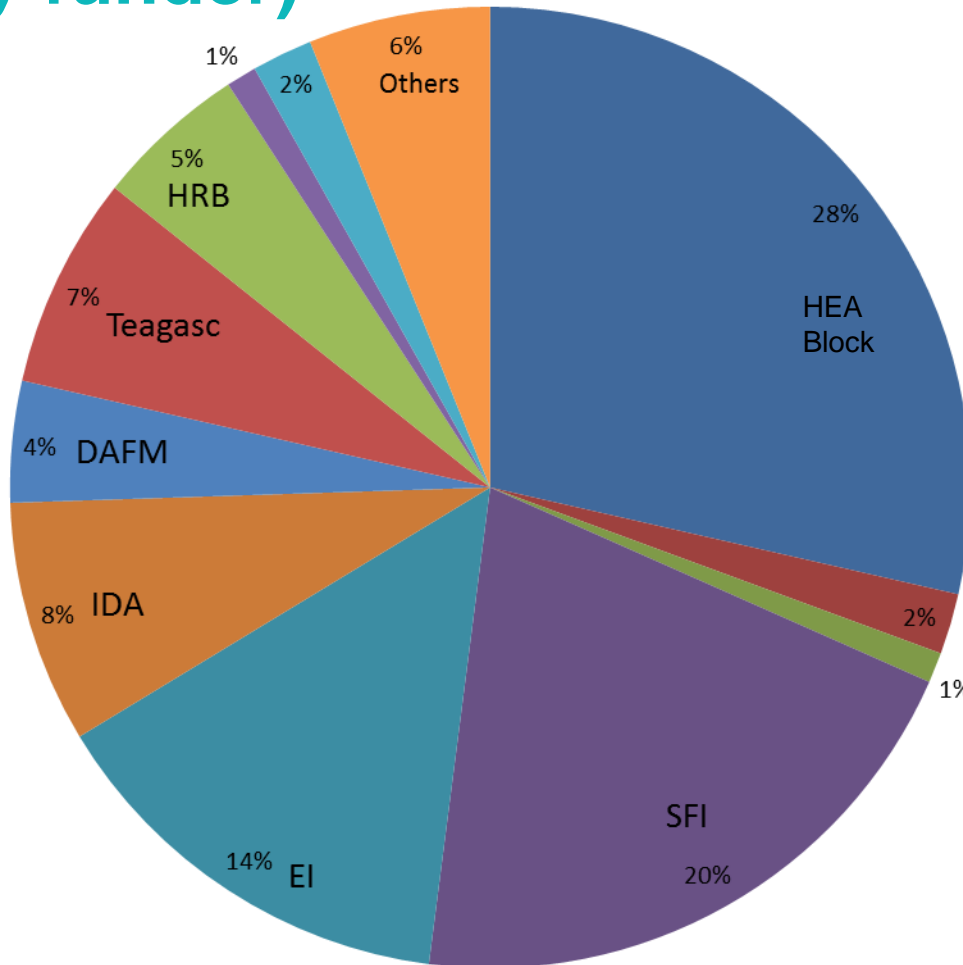
SFI Expenditure on R&D 2000 – 2013



Irish Government Budget Appropriations and Outlays on R&D (GBAORD) with time (€m) and as a percentage of Gross National product (GNP)



Public Expenditure on R&D 2012 (by funder)



- HEA Block 28% (€225m)
- IRCSET 2% (€20m)
- IRCHSS 1% (€11m)
- SFI 20% (€161m)
- EI 14% (€112m)
- IDA 8% (€63m)
- DAFM 4% (€28m)
- Teagasc 7% (€58m)
- HRB 5% (€37m)
- EPA 1% (€10m)
- Department of Jobs, Enterprise & Innovation 2% (€19m)
- Others (DCNR, SEIA, ESRI etc.) 6% (€51m)

Total: €796 million

What SFI actually does

- **Makes grants to Higher Education Institutes in Ireland**
- **Based on competitive, international merit review for scientific excellence and impact**
- **Trains people**
- **Builds infrastructure**
- **Produces scientific results and technology**
- **Significant industrial linkages attracting, anchoring and starting companies**
- **Leverages other research funding e.g. Industrial / EU / Charitable / Philanthropic**
 - **People & technology transfer to Industry & Society**
 - **Industry more competitive, better public services**
 - **Higher value products/services**
 - **Higher living standards**

What do we currently get for our annual €150m?

- **A research ‘engine’ of 3000 people, led by 500 leading scientists**
- **28 clusters/centres of scale**
- **5740 scientific publications**
- **80 patent filings, 27 patents awarded**
- **39 licensed technologies**
- **10 spin out companies formed**
- **583 companies partaking in 1,035 collaborations**
- **€156m in leveraged non-SFI funding**



What has Ireland achieved on this platform?

Building on the emerging technical foundation the Industrial base is transforming

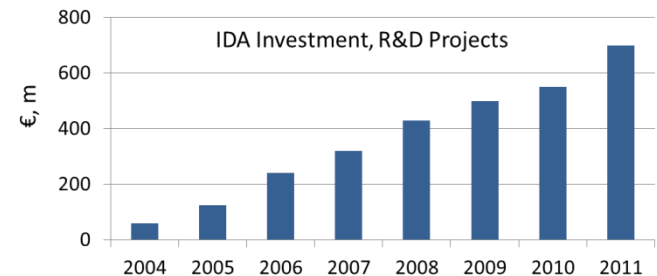


Major growth in commercialisation outputs

Metrics	2005-2006		Introduction of Technology Transfer Strengthening Initiative				Total 2007-2010
	2005	2006	2007	2008	2009	2010	
Licence/Option/Assignments	12	28	56	67	100	93	316
Spin-outs	5	8	13	7	35	31	86
Invention Disclosures	135	193	271	407	457	431	1566
Patents Applications	83	107	124	202	148	101	575



R&D projects now represent half of all multinational investments (up from 10% just 5 years ago)



Year

R&D Firms

Non R&D Firms

Value of Exports*

2000 → 2009

€38b → €87b

€44b → €18b

*Similar trend in value-added & employment

Job Links to SFI

SFI is a key part of the enterprise ecosystem

- From 1 January – 5 December 2012
 - SFI has links to 4,575 (52%) of the 8,788 jobs announced by the IDA during this period



Ireland International Citations Rankings (Thomson Reuters)

In global Top 20 in all fields

1 Molecular Genetics and Genomics

2 Probiotics

3 Immunology

6 Nanotechnology

8 Materials Science

10 Computer Science



The Global Innovation Index 2012 (Insead)



Ireland ranked overall 9th (out of 141 countries) – up from 13th in 2011, ahead of USA (ranked 10th)

Good Scores -

Institutions	4 th
Human Capital & Research	7 th
Access to Credit	4 th
Investor Protection	5 th
VC Deals	4 th
Exports of Goods & Services	1 st



Ireland: Assimilating & Disseminating Knowledge

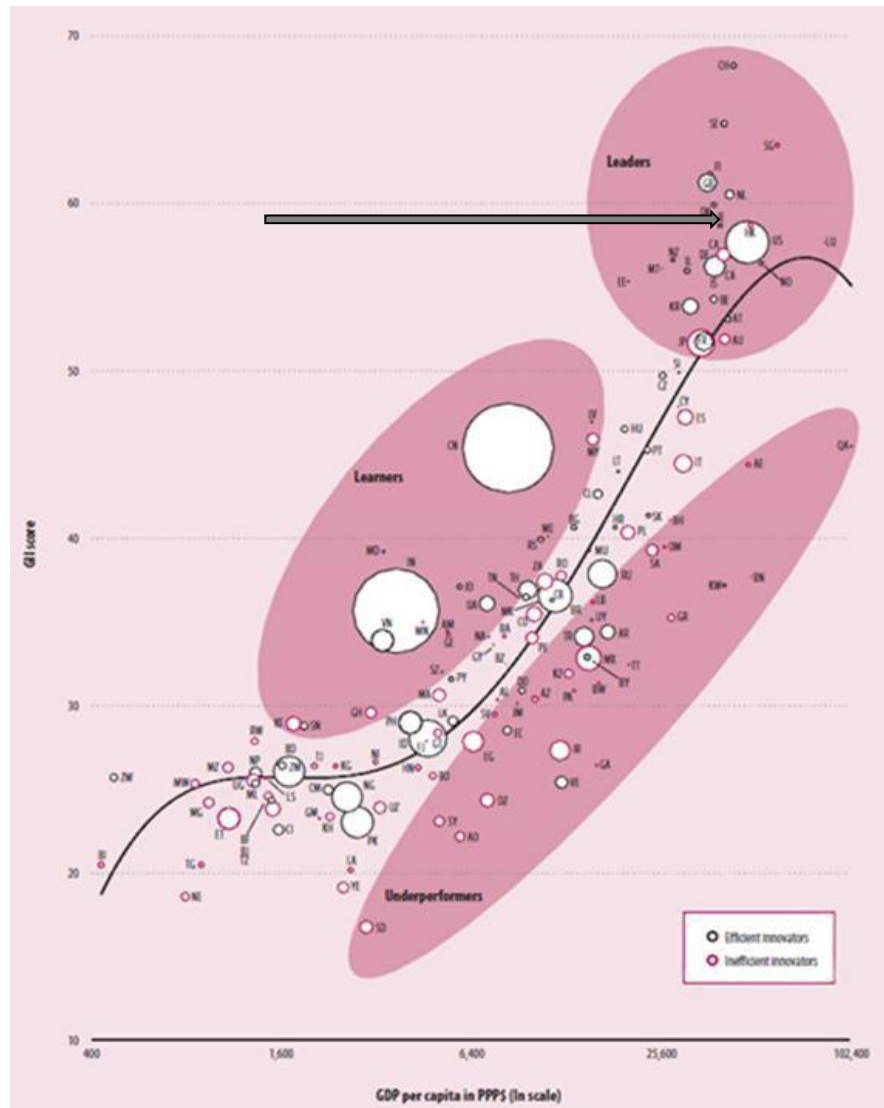
**Top 10 Ranking (out of 141 countries) in all 8 Indicators
(the only country to achieve this)**

Knowledge Absorption	2
Royalty & Licence Fee Payments / GDP	1
Computer and Comm Service Imports	1
Computer and Comm Service Exports	3
Knowledge Diffusion	2

Source: The Global Innovation Index 2012 Insead



Global Innovation Index v. GDP (Bubbles sized by Population) Ireland Efficient Innovation Leader



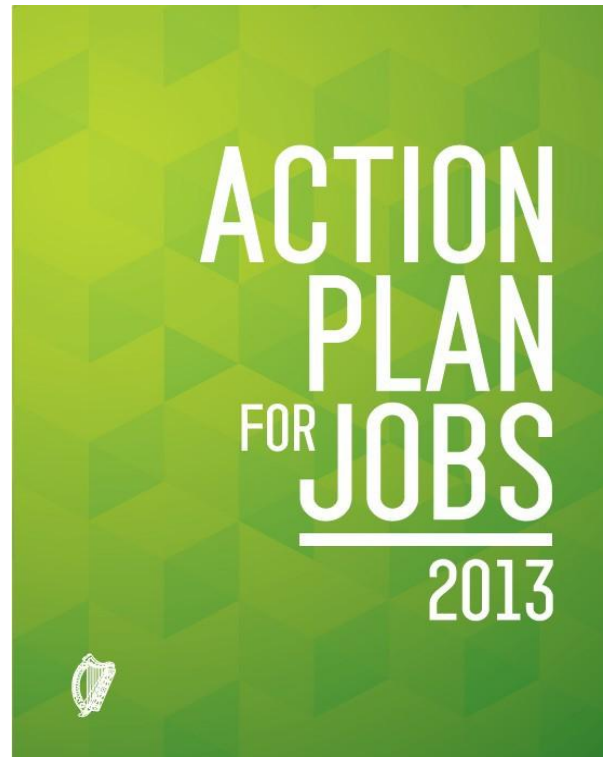
IBM 2012 Global Location Trends Report

Ireland Number 1

- In world for inward investment by quality and value
- In Europe for Jobs created in R&D
- In Europe for investment in pharmaceutical sector




Key Government Reports

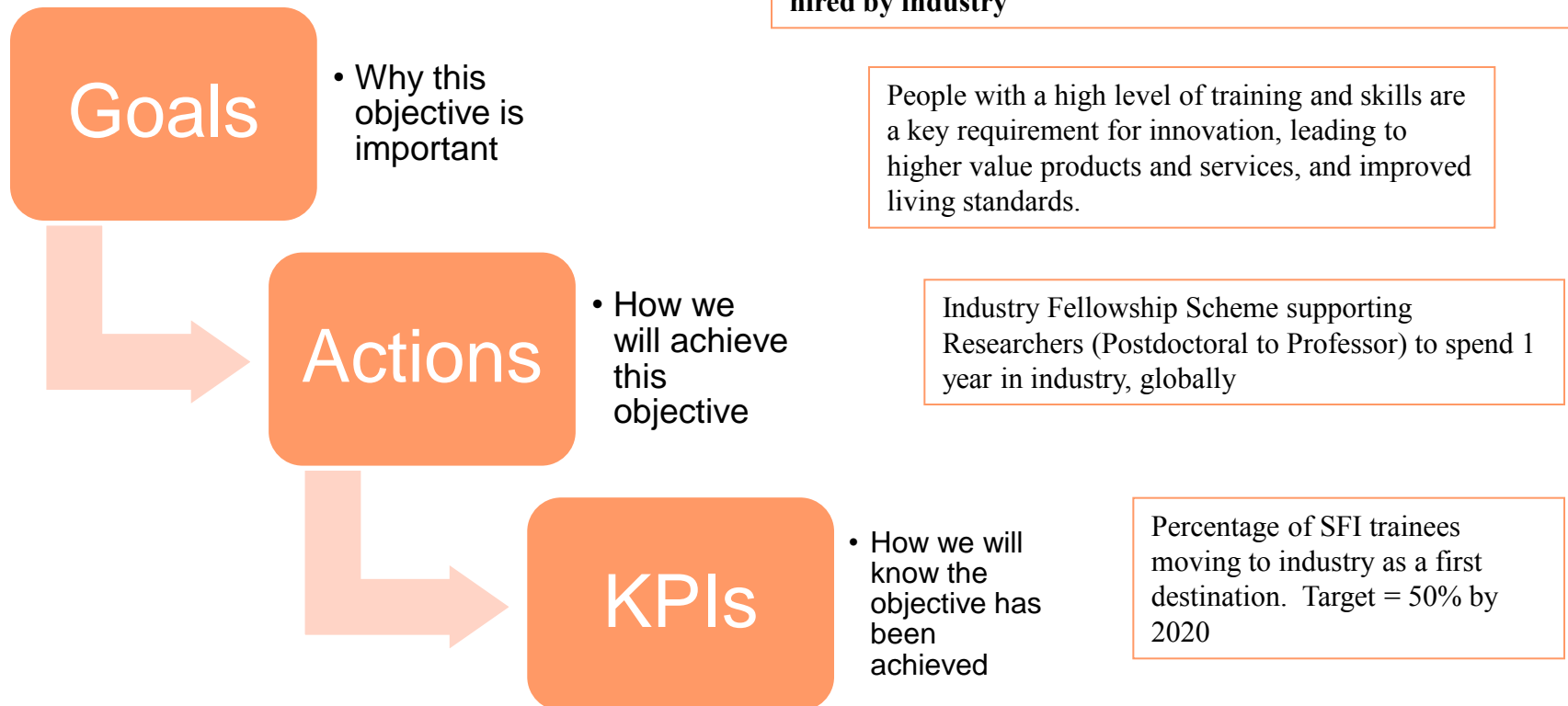


SFI Agenda 2020: Excellence and Impact

4 Strategic Objectives:

- (A) To be the best science funding agency in the world at creating impact from excellent research and demonstrating clear value for money invested
 - (B) To be the exemplar in building partnerships that fund excellent science and drive it out into the market and society
 - (C) To have the most engaged and scientifically informed public
 - (D) To represent the ideal modern public service organisation, staffed in a lean and flexible manner, with efficient and effective management.
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Structure of Agenda 2020



PROGRAMME	BRIEF DESCRIPTION	REMIT AREA*
<p>SFI Industry Fellowship</p>	<p>To promote the exchange of people at all levels between academia and industry (both SME and MNC). Fellowship funding is provided across the entire academic salary scale for awards up to 1 year (renewable competitively).</p>	<p>14 NRPE areas or Any area under SFI's legal remit where strong evidence can be provided of significant industrial relevance and strong economic impact (e.g. a sustained track record of major industrial funding, significant international funding and/or spin out activities)</p>

PROGRAMME	BRIEF DESCRIPTION	REMIT AREA*
<p>SFI Partnerships</p>	<p>Science Foundation Ireland will engage with partners to co-support outstanding initiatives which will build research strength in Ireland. The programme will fund projects or people (for a limited time) to aid development and retention of talented researchers, foster industrial collaborations and develop capacity in areas of emerging importance.</p>	<p>All areas covered by SFI's legal remit</p>

SFI Centres Programme

- Proposal within at least one research priority category
- Excellence review for science and impact by two independent international panels
- Core support (up to 20%) platform research (up to 30%)
- Spokes
 - annual call
 - rolling call if >50% cash support from industry
- Must have overall at least 30% of budget from industry with minimum of 10% overall budget in industry cash and mix of small and large companies
- Centre structure assists: open evaluation / sustainability / flexibility / evolution with time

SFI Research Centres

- Largest ever state/industry co-funded research investment in Ireland
- €200m of new Exchequer funds from SFI for 7 World Class Research Centres over 6 years
- €100m co-investment by over 150 industry partners
- Supports key growth areas targeted in the Action Plan for Jobs 2013
- Targets research into major social challenges, including Health and Energy
- Directly supporting 800 top-class researcher positions



Research Centres Programme

- **7 Research Centres funded**
- **5 growing out of existing large-scale SFI investment**
- **2 newly emerging centres**
- **Total commitment of €300m over six years:**
 - €200m from SFI
 - €100m (mix of cash and in-kind) from industry partners

Research Centres (Life Sciences)

Centre	Topic(s)	Approx. Budget	
		Total	Annual
APC – Alimentary Pharmabiotic Centre	Food for health; pharamabiotics	€50m	€8m
INFANT	Perinatal health	€15m	€2m
SSPC – Synthesis and Solid-State Pharmaceutical Centre	Pharmaceutical production chain: synthesis, isolation and formulation	€30m	€5m



Research Centres (ICT & Energy)

Centre	Topic(s)	Approx. Budget	
		Total	Annual
AMBER – Advanced Materials and Bio-Engineering Research	Materials Science; nano-technology; bio-nano	€55m	€9m
INSIGHT	Big data; data analysis, data management; Connected Health	€75m	€12m
I-PIC – Irish Photonic Integration Research Centre	Photonics systems – communications & med-devices	€25m	€4m
MaREI – Marine Renewable Energy Ireland	Marine renewable energy; materials; smart grid	€25m	€4m

SFI Research Centres 2013

- SFI launching a call for new Research Centres in 2013
- Expect to fund 3-4 centres
- Call will be thematic in focus

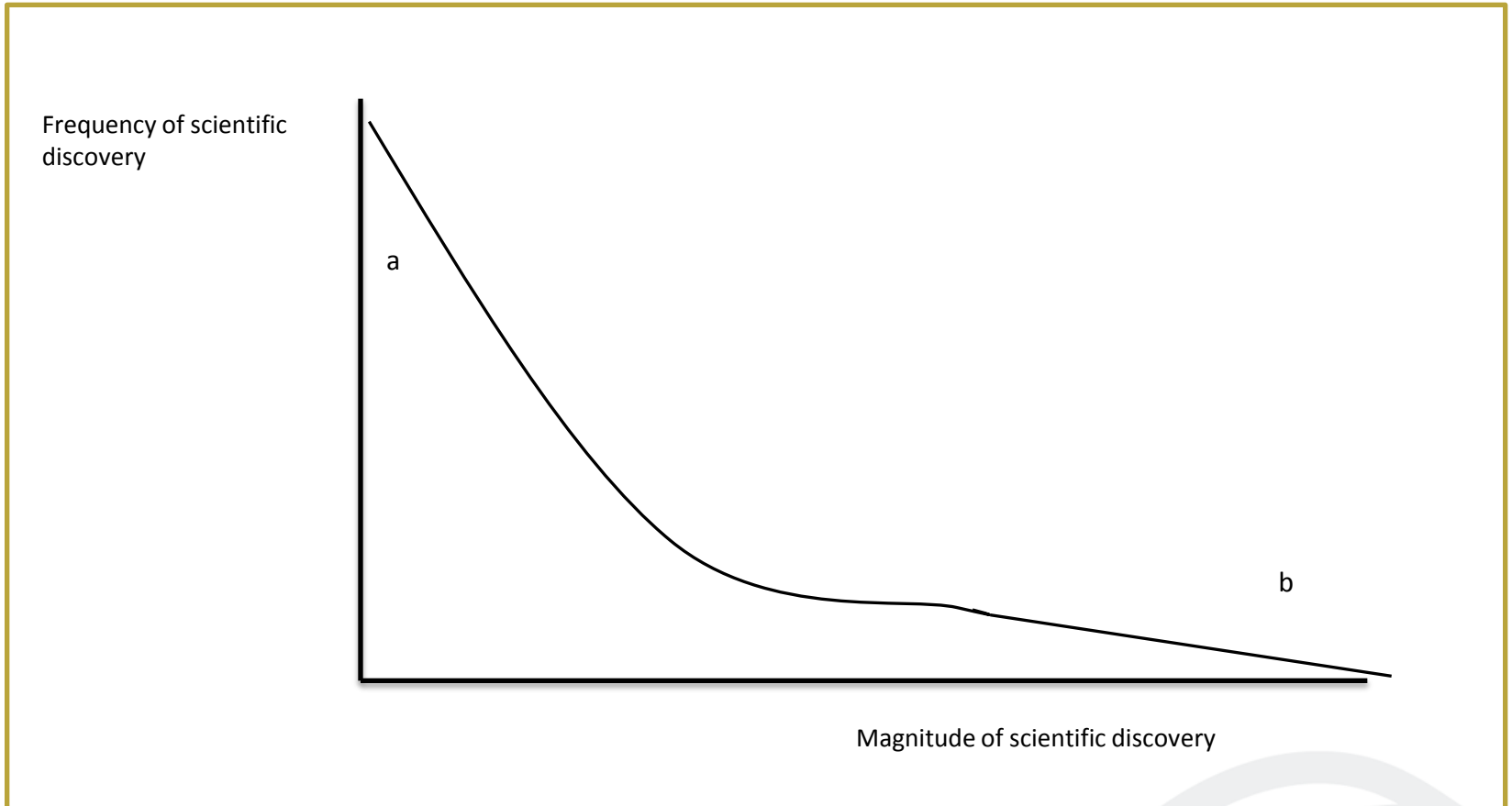


Research Centre Spokes Programme

- **Flexible funding mechanism to allow Centres to grow as they attract new industry partners**
- **Two strands – fixed & rolling call**
- **Fixed call:**
 - Run annually. 30% cost share (10% cash, 20% in-kind)
- **Rolling call:**
 - Submissions accepted any time.
 - 50% cash cost-share.



Frequency v. Magnitude of Scientific Discovery

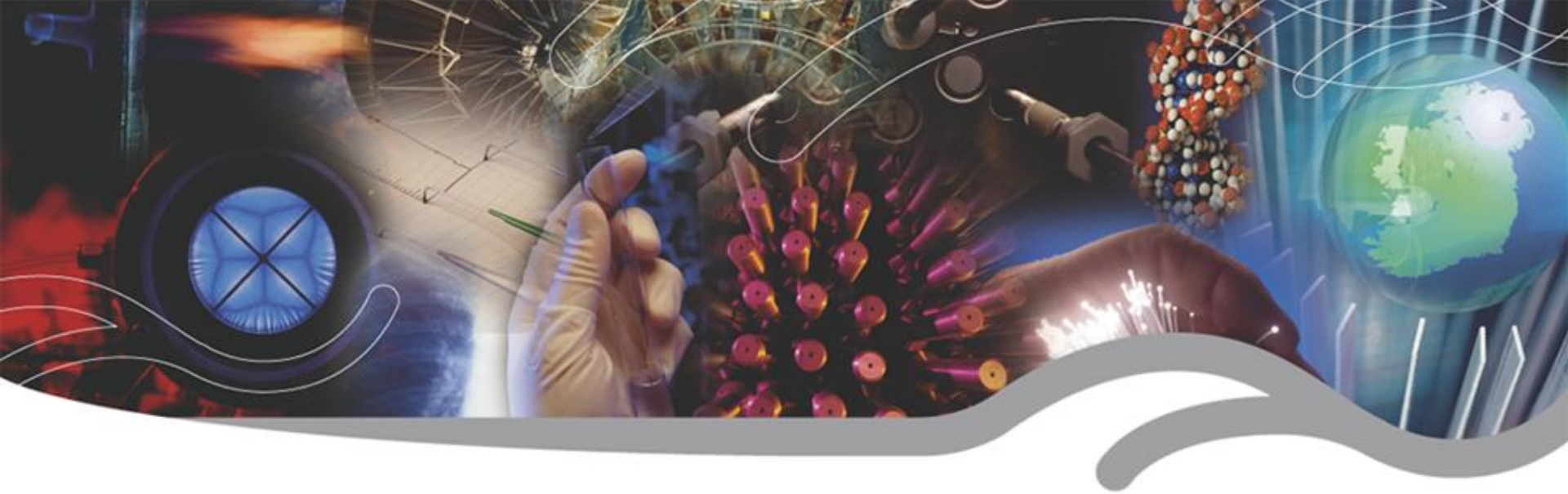


Heavy Tailed Distribution

Time of Unprecedented Opportunity & Change

- Fast pace of discovery
- Knowledge generation no longer the only rate limiting step – knowledge application
- Huge quantities of data
- Significant political and societal changes
- Market share is won or lost at times of change





Fondúireacht Eolaíochta Éireann

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