

Dowling

Dowling
2015 7

Dame Ann Dowling

Dame Ann Dowling

Dame Ann Dowling

Dowling

Jo Johnson MP

1.

[Govt/RCs/IUK/FCs]¹

2.

REF

REF2014

a.

b.

c.

[FCs]

3.

[Univs]

4.

[Univs/RCs/IUK]

5.

[Govt/IUK]

6.

[IUK]

7.

[FCs/RCs/IUK/Univs]

8.

¹ 方括号中的机构类别指建议的主要目标: Bus (企业)、FCs (资助委员会)、Govt (政府)、IPO (知识产权局)、IUK (创新英国)、RCs (研究委员会)、TTOs (大学技术转让办公室)、Univs (大学)。附录 E 中可看到按照目标进行的建议分组。

9.

a.

b.

c.

[RCs/Univs]

10.

HEFCE

NCUB

a.

b.

c.

d.

e.

f.

[FCs/IUK/RCs]

11. Catapult

a.

b.

Catapult

c.

Catapult

Catapult

Catapult

[Govt/IUK]

12.

VAT

[Govt]

13.

[RCs/IUK]

14.

KTP

KTP

[IUK]

15. CASE

CASE

CASE

[RCs]

16.

HEIF

[Govt/FCs]

17. IAA
IAA [RCs]

18.

[Govt/RCs/IUK]

19. TTO

a. TTO

b. TTO

c. TTO

[Univs/TTO]

20. IPO
[IPO/Govt]

21.

[RCs/IUK]

22. IPO

23.

TTO

[RCs/IUK/FCs/Univs/TTOs/Bus]

24.

[Govt/Bus]

25.

[Govt/Bus/IUK]

26.

25

[Govt/Bus]

27.

[Govt]

28. [P%3W8@vM5T493.879FA07Avt]

1.	.....	10
	.....	10
	.....	11
	.....	14
	.....	17
	.....	24
2.	.....	27
	.....	27
	.....	29
	.....	30
	.....	32
	.....	34
	.....	36
	.....	37
	.....	38
3.	.....	43
	.....	43
	KTP	44
CASE	.....	45
	.....	47
	.....	50
	.....	52
	.....	52
	.....	45

??

DC BT 0 0 1 504

?

1.

1. 2014 12 12

Rt Hon Greg Clark MP

²12 19

BIS

Martin Donnelly CMG

A

2015

2. 1

3

3.

Catapults
LEPs

REF

4.

1

5.

² business industry
³

1

2015	Dame Ann Dowling		
2014	Hermann Hauser	NCUB Catapult BIS	
2013	S&T IPO Lord Heseltine Lord Young Sir Andrew Witty	Lambert	8
2012	Sir Tim Wilson NCUB		
2010	Hermann Hauser		
2007	Lord Sainsbury		
2003	Sir Richard Lambert		

6.

B

7.

8.

215

C

ICARG

NCUB
HEFCE

2

D

9.

Richard Lambert Andrew Witty
Paul Nurse

NCUB

9

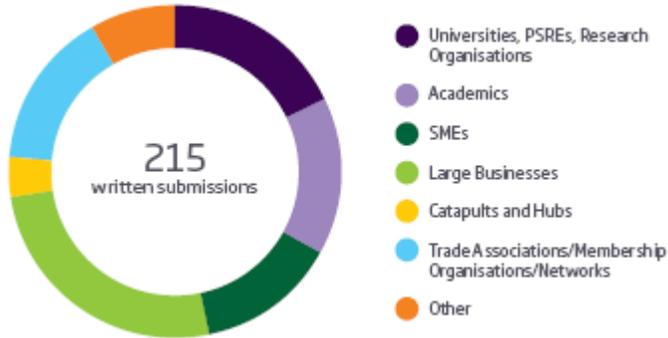
Dowling

3

1

4

2 Dowling



215

Public Sector Research Establishments

/ /

6

1

-

- 200

-

3

2010 2015 ⁵

4

⁵ NCUB

21
Hermann Hauser

2010
NCUB 2014

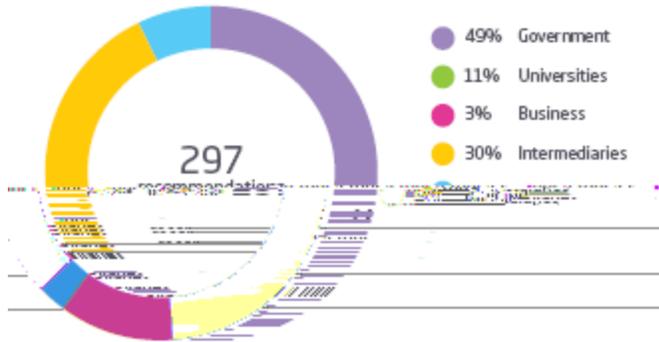
Wilson 2012

Sir Andrew Witty
2013

CBI 2015
2014 Catapult
Witty
Lord Heseltine 2013
Hermann Hauser

2013
Tim Wilson
2010

Recommendations addressed to



297

49%

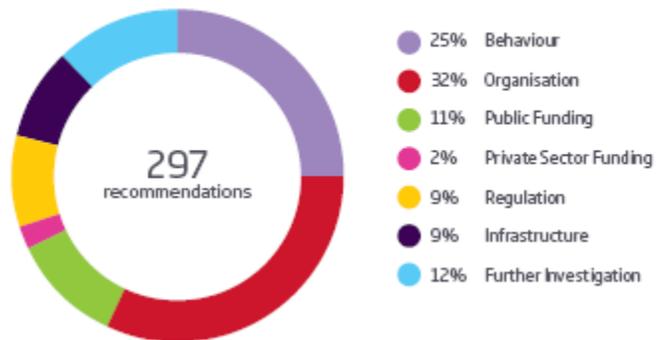
11%

3%

30%

7%

Changes are recommended in



297

25%

32%

11%

2%

9%

9%
12%

1.

NCUB

3

9

297

7

●

Catapult LEP

●

Catapult

●

KPI

Catapult

●

HEIF

●

LEP

VAT

●

●

KTN SBRI

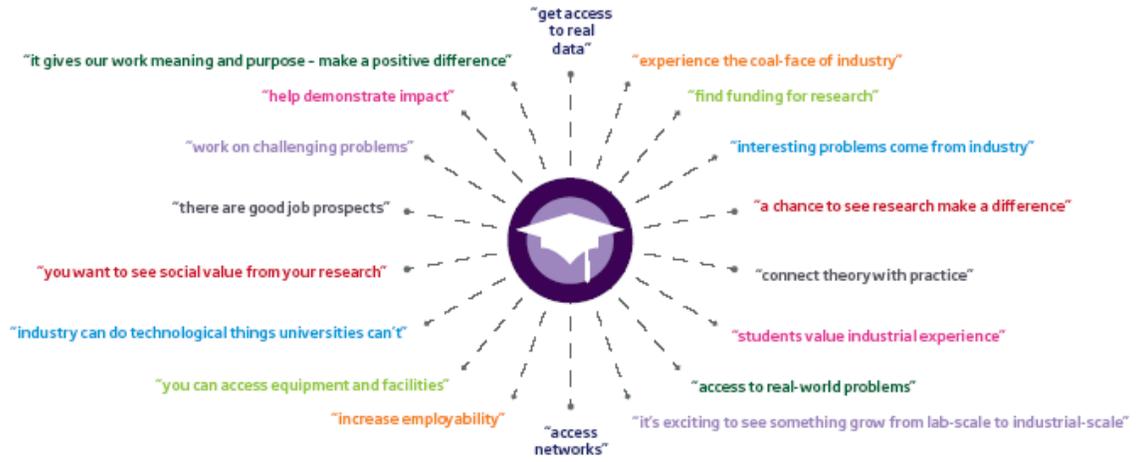
/

Dowling Review

10.

11. 4

NCUB



12.

15

17.

16

17

18.

Technopolis

REF

500

18

5

19

19.

Technopolis

REF

6

5

REF

/

20.

171

5

10

22% 102

7.9% 75

5

5

REF

15

2014 p4

2013 p54

2015 p5

16

2014 2015

2014

17

2014

2014

18

Technopolis

2015

19 1

17

21.

HEFCE

22. 91
HEI 50%

68

12,240

7

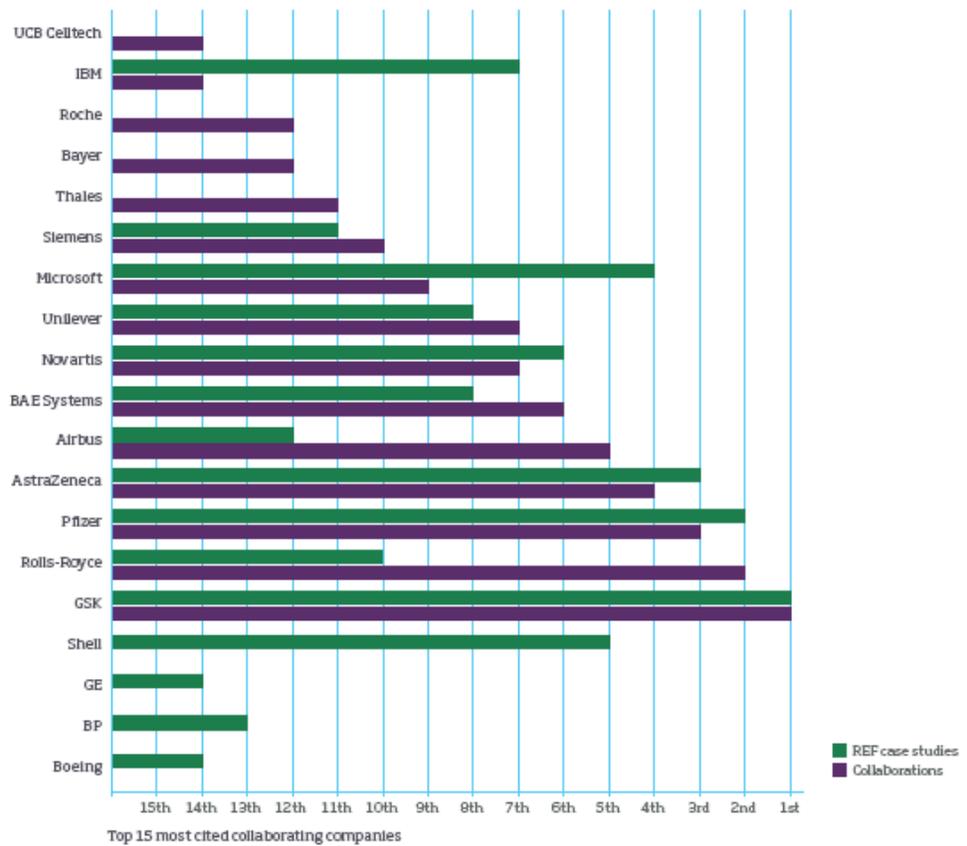
REF

REF

7 REF

15

21

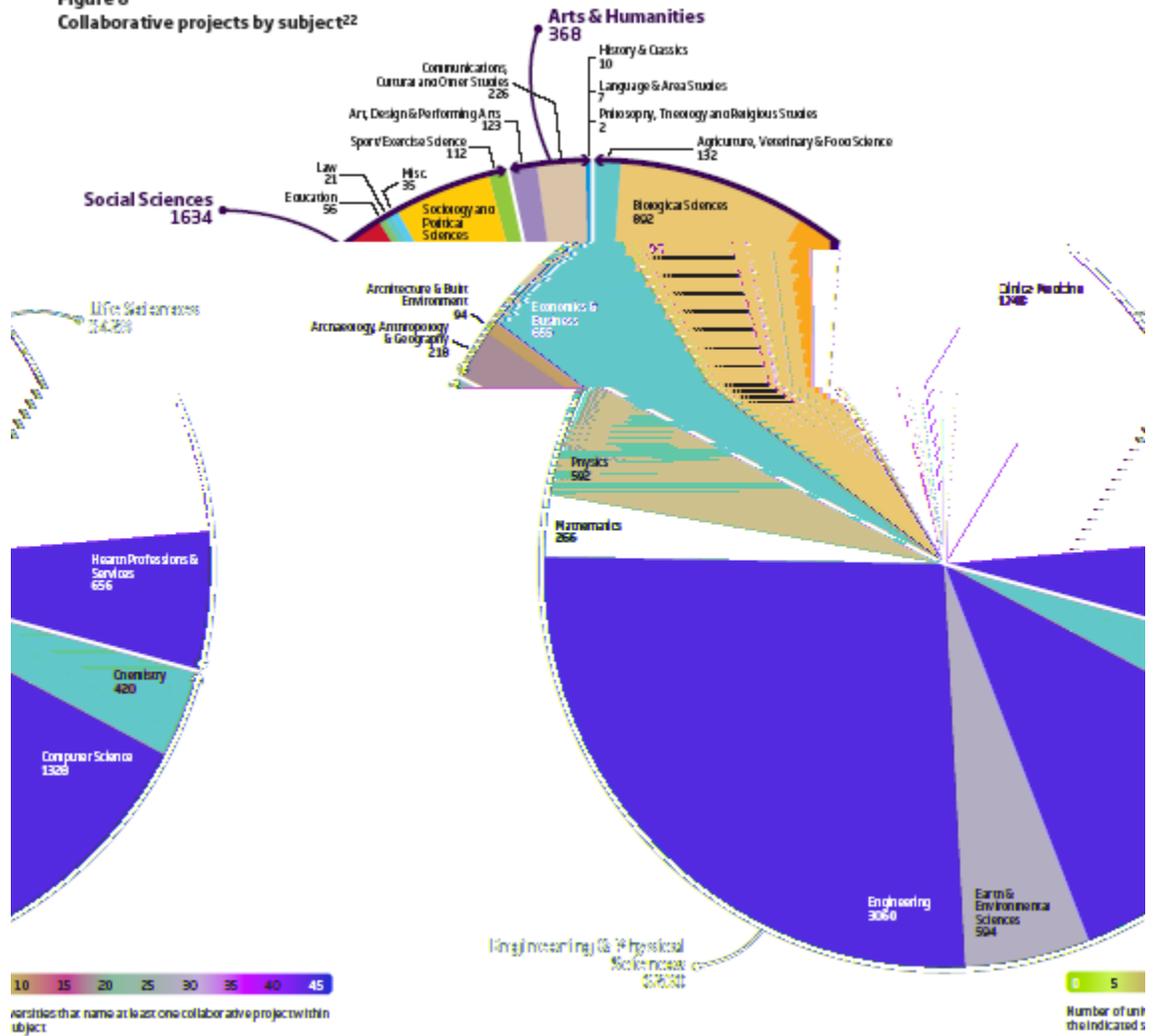


REF

8

22

Figure 8
Collaborative projects by subject²²



22

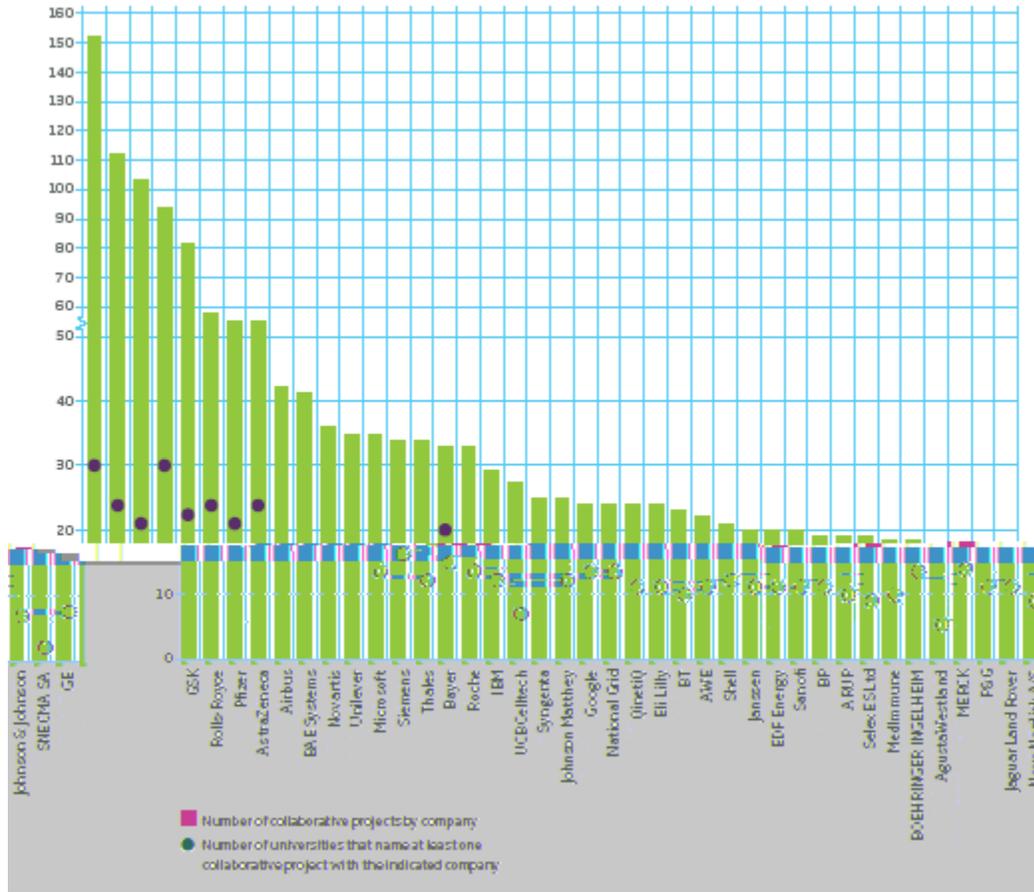
68

68
REF

12,240

91

10,933



24. 9

40

25.

5

6

32.

33.

- **R1**

Govt/RC/IUK/FC

2.

SFC		DELNI	HEFCW
2015-16	HEFCE	39.71	²⁹ HEFCW
1.54	³⁰ SFC	10.41	³¹ DELNI
			1.865

37.

10

4

12

40

38.

	12	10	42	
		10		10
1			1	REF
2			2	
3			3	
4			4	
=5			=5	
=5			=5	

42.

43.

REF

⁴³ REF 2014

2015-16

REF

⁴⁴

44. REF2014

3

⁴⁵

45.

REF2014

3 REF 2014

REF 2014

⁴⁶

⁴³ HEFCE, SFC, HEFCW, DELNI

⁴⁴

⁴⁵ PraxisUnico Dowling PraxisUnico 2015

⁴⁶ REF 2014 www.ref.ac.uk 2015

● R2 REF

REF2014

1

2

3

[FC]

● R3

[Univ]

● R4

[Univ/RC/IUK]

48.

49.

12

50.

55

56

57

58

51.

59

60

52.

61

HEFCE
HEI

62

53.

● R5

[Govt/IUK]

56

2014 p32

57

2014 p36

58

2014 p38

59

2013

60

2013

61

2014

62 SME

ERC

HEFCE

2015

● R6

[IUK]

54.

55.

56.

4 10

REF

4

●

●

LSE

⁶³

●

⁶⁴

●

⁶⁵

●

GSK

⁶⁶

●

MRC

⁶⁷

●

⁶³ LSE

<http://www.lse.ac.uk/europeanInstitute/staff/visitingStaff/visitingStaffScheme.aspx>

⁶⁴

<http://www.raeng.org.uk/grants-and-prizes/schemesfor-people-in-industry>

⁶⁵

<https://royalsociety.org/grants/schemes/industry-fellowship/>

⁶⁶

⁶⁷

<http://www.manchester.ac.uk/collaborate/business-engagement/knowledge-exchange/collaboration-funding/mrc-p2d/>

68

10

69

● BP 2,200
2000

BP

BP

20%

BP BP

BP

57.

/

58.

EngD
PhD

59.

PI

60.

● **R7**

⁶⁸ GLAZgo

⁶⁹ GLAZgo

⁷⁰ BP

⁷¹

<http://www.cam.ac.uk/research/news/bp-institute-for-multiphase-flow>

IAA

<http://www.admin.cam.ac.uk/offices/rso/iaa/bestpractice/secondment-lessons-from-practice-140426.pdf>

[FC/RC/IUK/Univ]

- R8

[Univ/RC]

- R9

1

2

3

[RC/Univ]

61.

10

12

62.

72

-

KTN

73

-

_connect

74

-

Witty

75

-

76

-

77

72

2014 2015
2015

NCUB 2015

73 KTN <http://www.ktn-uk.co.uk/>

74 _connect <https://connect.innovateuk.org/home>

75 Andrew Witty Witty 2013 p40

76 <http://gtr.rcuk.ac.uk/resources/about.html>

77 <https://www.ukknowledgelandscape.co.uk/welcome>

- 2005
- 2007

78

6

79

●
●
●
●

OPENISME

80

81

EEN

600

67.

● R10

NCUB

HEFCE

1.

2.

3.

4.

5.

6.

KTN

[FC/IUK/RC]

68.

5.

250

84

85

●

/

84
85

NESTA 2013

<http://creativeeconomy.britishcouncil.org/projects/hubs>



86

REACT

HEI
Watershed

87

NESTA



88

69.

Catapult

5

89

86

<http://creativehubs.org/en/creative-hubs-project/what-is-a-creative-hub>

87 REACT

<http://www.react-hub.org.uk/about/>

88

NESTA 2013 p61

89

2014

70.



2007 IKC 7 IKC
90 91



PSRE 92 93

71. HEFCE

UKRPIF

5

HEFCE

UKRPIF

2014-17
13

HEI

94

34

72. Catapult

/
Catapult

6.71 Catapult
Catapult
GVA
Catapult 1
95 9697

Catapult Hermann Hauser
98

73 Catapult

Catapult

Catapult

Catapult

74. Catapult

Catapult Fraunhofer

Fraunhofer

60

⁹⁰ EPSRC <https://www.epsrc.ac.uk/newsevents/news/ikcsynbio/>

⁹¹ EPSRC <https://www.epsrc.ac.uk/innovation/business/opportunities/ikcs/>

⁹²

Technopolis 2011

⁹³ PSRE WECD 2014

⁹⁴ HEFCE <http://www.hefce.ac.uk/rsrch/ukrpif/>

⁹⁵

2008

<http://www.airto.co.uk/oxfordeconomics.pdf>

⁹⁶

2006

<http://www.ifs.org.uk/wps/wp0702.pdf>

⁹⁷

2014 p25

⁹⁸

Catapult Hermann Hauser 2014

Catapult
Catapult

75.

Catapult

Catapult
Hermann Hauser

Catapult

2020

95%

79.

VAT

Francis Crick
Catapult

VAT

R12

VAT

[Govt]

3.

80.

-
-
-
-

CASE

Catalyst

100

81.

Catalyst

Catapult

82.

TRL 4-6

TRL

TRL

1-3

83.

Catalyst

TRL

TRL

84.

-

100

2014

● R13

[RC/IUK]

KTP

85.

KTP

101

KTP

6

¹⁰²KTP

2013-14

81%

KTP

6

3

86. KTP

KTP

58%

KTP

96.7

3

86%

103

KTP

1

4.70-5.20

GVA

¹⁰⁴

KTP

87. KTP

40

KTP

KTP

2013

4

13

664

2010

2010

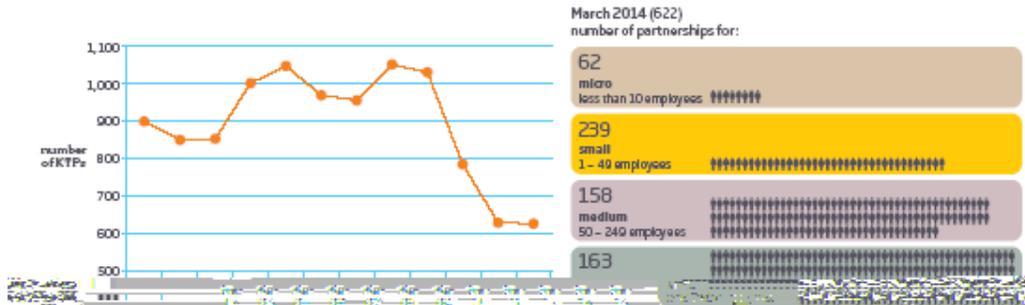
1050

105106

13

KTP

107



101

Regeneris

2010

102

<https://www.gov.uk/innovation-get-details-about-innovate-uk-funding-competitions>

103

2013-2014

2015

104

Regeneris

2010

105

106

2010-2011

2012

107

KTP

2014 3

KTP
2014 3 622

62 10
239
1-49
158
50-249
163
249

108

KTP

- **R14 KTP**
KTP
[IUK]

CASE

88. CASE

PhD

109

108
109

CIHE 2012

<http://www.rcuk.ac.uk/RCUK-prod/assets/documents/skills/rcdvision.pdf>

		AHRC	BBSRC	ESRC	EPSRC	MRC	NERC	STFC
iCASE ^a	iCASE	-	75	-	210	-	-	-
		-	10 ^b KTN	-	40	-	-	-
		-	BBSRC	-	EPSRC	-	-	-
DTP	DTP	974 2014	340	743 2014 600	1200	155	~240	-
	DTP CASE	-	90	~16	120		~72	-
	CASE	-	~26%	20% ^c	10%		~30% 50%	-
CASE		90 CDA ^d 18	-	-	-	~30-35	~35	~5
		18 KE Hub CDA						
CASE			~35					
			2015 3	2017 30%	KTN CASE	-		
			125 ^e					
		KE Hub	DTP CASE	DTP CASE	SME		CASE 1000	

89.

CASE

CASE

14 CASE

14¹¹⁰

a iCASE

b <http://www.bbsrc.ac.uk/business/training/industrial-case-partnerships/>

c ESRC 20% 50%
d AHRC CASE “ ” CDA
e <http://www.bbsrc.ac.uk/news/people-skills-training/2015/150325-n-changes-to-icase-studentships/>

90. CASE
2011 CASE EPSRC
CASE 40
210 BBSRC 10 75
2015 3
CASE
CASE
CASE
14

● R15 CASE

- CASE
- CASE [RC]

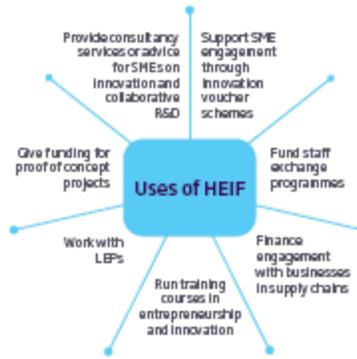
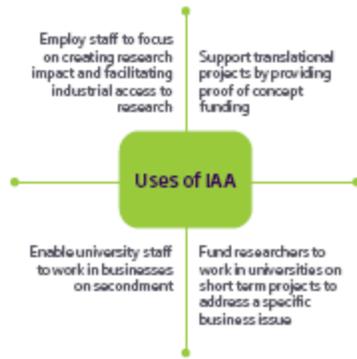
91.

HEIF IAA

92.

93. 15

15 IAA HEIF



IAA

HEIF

LEP

94. HEFCE

HEIF

¹¹¹ 2011 8 2015 7
HEFCE 1.5

¹¹² HEIF

¹¹³ HEIF

15 HEIF

¹¹¹ HEIF

¹¹² HEIF

¹¹³ HEIF

<https://www.hefce.ac.uk/kess/heif/strategies/>
<https://www.hefce.ac.uk/pubs/year/2011/201116/>
<https://www.hefce.ac.uk/pubs/year/2011/201116/>

95. NIHEIF 400 114

115 116 HEFCW
800

117118

96. HEIF HEIF LEP 119

HEIF 2003-2012 1 6.30
¹²⁰HEIF

97. IAA
EPSRC 2012 IAA 4
15 IAA

98. IAA
HEIF
ESRC EPSRC IPR IAA 100 STFC 5

IAA

99.

¹¹⁴ NI
<http://www.delni.gov.uk/index/further-and-higher-education/higher-education/role-structure-he-division/knowledge-transfer/higher-education-innovation-fund.htm>

¹¹⁵ 2013

¹¹⁶ SFC
<http://www.sfc.ac.uk/FundingImpact/KnowledgeExchange/Universities/KnowledgeTransferGrant/KnowledgeTransferGrant.aspx>

¹¹⁷ HEFCW
https://www.hefcw.ac.uk/policy_areas/business_and_communities/funding_initiatives.aspx

¹¹⁸ HEFCW 2014

¹¹⁹ HEFCE 2014

¹²⁰ HEIF HEFCE 2014

● R16

[Govt/FC]

● R17

IAA

IAA

[RC]

100

101.

102.

EPSRC 2013
EPSRC
121

1290

Harwell

103.

EPSRC
122

123

HEFCE

29

1.2

-
-
-
-
-

124

104.

¹²¹ 1290
¹²² 2010/11
¹²³
¹²⁴

2010-2011

EPSRC 2013
2011

2011

2011

● R18

ACE
[Govt/RC/IUK]

110.

111.

TTO

TTO

TTO

127128

112.

TTO

TTO

113.

TTP

TTO

TTO

IPR

129

TTO

TTO

Peter Saraga

130

114.

¹²⁷

¹²⁸ PraxisUnico

Dowling

PraxisUnico 2015

2013

2013 3.1

¹²⁹

IPO 2013

¹³⁰

Saraga

2007

TTP

HEIF

TTO

131

115.
CRT

TTO

CRT

CRT

CRT

TTO

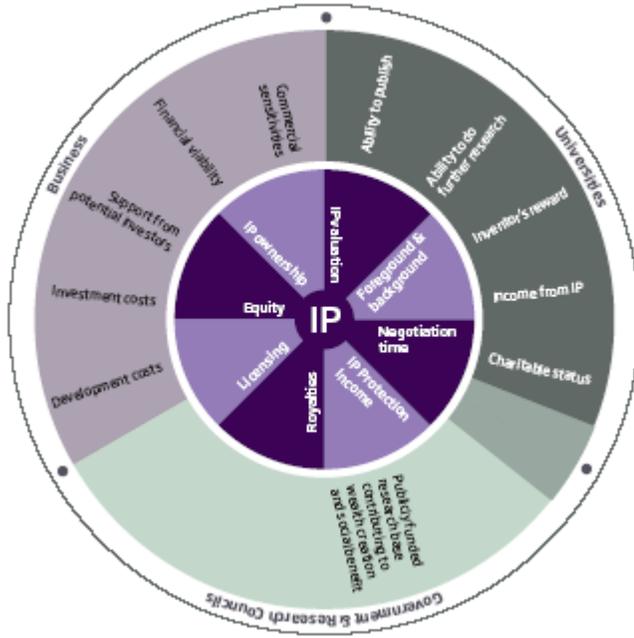
TTO

116.

TTO

16

Figure 16



IP
IP

IP

IP

119. Lambert 2005

Lambert 133 80% 134 10-15%

120. Lambert

IP IP IP

121.

SFC SFC Lambert 5000

122.

123.

● MRC MRC NHS mICRA MRC
● EPSRC 15 IPR
17 HEI

133

Lambert

134

Lambert

8

IPO 2013 p4

124.

/

125.

IP



- R20

IPO

[IPO/Govt]

- R21

[RC/IUK]

/

- R22

IPO

[IUK/IPO]

- R23

TTO

[RC/IUK/FC/Univ/TTO/Bus]

4.

126.

127.

135

128.

136

137

138

● R24

[Govt/Bus]

135				2014				2012
		2011				2010		
136								
	2013	1	9.67 GVA	1	4.22 GVA	2013		
137		Andrew Witty		Witty		2013		
138								

129.

- R27

HMRC

BIS

[Govt]

SGC

2004

SGC

1100

450

250

¹⁴⁹SGC

-
-
-
-
-
-

150

● R28

[Govt/Bus]

136.

137.

SBRI

100

5

10
151

152

138. SBRI

SBIR
1

2013-14
153

SBRI

7,850
SBRI
154

KTP

Polyphotonix

149

RAND 2014

150

RAND 2014

151

<https://www.gov.uk/innovation-get-details-about-innovate-uk-funding-competitions>

152

SBRI <https://sbri.innovateuk.org/>

153

2015 11

154

2015 10

● **R29**

SBRI
[Govt]

NHS

139. NHS

NHS

NHS

140.

NHS

NHS

NHS

NHS

7

7 NHS

NHS

NHS

NHS

156

157

NHS

NHS

158

NHS

159

NIHR

NHS

160

● **R30 NHS**

¹⁵⁵ Dowling

2015

¹⁵⁶ NHS NHS

2011 p6

¹⁵⁷ NHS p9

¹⁵⁸ Dame Ann Dowling 2015

¹⁵⁹

[Govt]

LEPs

141. LEP

161

HEI

162

163

142. LEP

¹⁶⁴LEP

¹⁶⁵BIS

LEP

166

LEP

143. LEP

● LEP

●

167

● LEP

LEP

144. HEI LEP 39
LEP

172 LEP

/ KTP Catapult

145. LEP 173 6.6 2014-2020
174175

146. NCUB LEP 176 LEP LEP
LEP

HEFCE LEP
177 LEP

LEP

147. LEP LEP / LEP
LEP DCLG BIS
LEP LEP

148. KTN LEP EEN

171 615

<https://www.gov.uk/business-finance-support-finder/search>

172 2014 p12

173 2013

174 2014 2014

175 2014 p61

176 2014 p61

177 HEFCE 2015

BIS

LEP

DCLG

- R31 LEP

BIS DCLG

[Govt/IUK]

- R32

BIS DCLG

[IUK/Govt]

5.

149.

150.

151.

152.

153.

AHRC	AHRC
AMS	
BA	
BBSRC	BBSRC
CASE	
Catalyst	Catalyst
Catapult	Catapult
CDT	CDT
_connect	_connect
Connected	DELNI
CST	CST
DELNI	DELNI
DTP	DTP
EEN	EEN
EngD	PhD
EPSRC	EPSRC
ERDF	ERDF
ESIF	ESIF
ESRC	ESRC

FDI	FDI
	40
	LEP
GVA	
HEFCE	HEFCE
HEFCW	HEFCW
HEI	
HEIF	HEIF HEFCE
Horizon 2020	
HVMC	Catapult Catapult
IAA	IAA
ICARG	
	2013
IKC	IKC
	SFC
IP	IP
IPR	

KTG	
KTN	KTN
KTP	KTP
Lambert	IP
Launchpad	Launchpad
LEP	LEP
MRC	MRC
NCUB	NCUB
NERC	
NESTA	
NIHR	NIHR NHS
Praxis Unico	
PSRE	PSRE
RAEng	
REF	REF

	7
RCUK	RCUK 7
RPIF	UKRPIF HEFCE
RS	
RTO	RTO
SBRI	SBRI
SFC	SFC
STFC	STFC
TRL	TRL
TTO	TTO
UEZ	UEZ

A

BIS

Professor Dame Ann Dowling DBE ScD FRS FREng
President of the Royal Academy and
Professor of Mechanical Engineering
University of Cambridge
Trumpington Street
Cambridge
CB2 1PZ

Martin Donnelly CMG

1 Victoria Street
London
SW1H 0ET

+44(0)2072155544
perm.sec@bis.gsi.gov.uk

www.gov.uk/bis

2014 12 19

Ann
BIS

BIS

2015 5

Martin Donnelly

C

1.

2.

3.

4.

5.

6.

7.

8.

/ /

3,000

2015 3 6

Dowling

D

ADS
ARCC
AGCO
AkzoNobel
Aralia
ARM
AIRTO
AURIL
ABPI
AEngD
AVID
BAE
Barnes Aerospace
BBC
BEP
Bifrangi
Boom Cymru TV
BP
BRE
BT
CaSE
CPI
LEP
Cintec
Clifford Chance LLP
LEP

Cobham

CIRIA

Croda

Crossword Cybersecurity

Data Burrowing Solutions

Dearman

Catapult

EEF

Elsevier

Eni S.p.A

EPSRC

CMAC

EPSRC

EPSRC

FlyingBinary

Fraunhofer

Catapult

Harbro

HCEUK

Heat Trace

Heptares Therapeutics

Catapult

HEFCE

Humber LEP

Imanova

IN-PART

ICR

IOP

IChemE

ICE

IET

RepKnight

REACT

Ridgeway

RPPtv

Safinah

Catapult

Selden Research

Sequence

SETsquared

Sevcon

Smith

SP Energy Networks

SSE

Swindon Wiltshire LEP

TBG Solutions

LEP

Terma

Thales

Thames Water

Thomas Swan & Co. Ltd

Transport iNet

Catapult

Turing

TWI

BIA

Vulpine
Weir

Zettlex

E

1.

5.

11. Catapult

1

2

3 Catapult

Catapult

Catapult

Catapult

12.

VAT

16.

18.

ACE

20.

IPO

24.

25.

26.

25

27.

HMRC

BIS

28.

29. SBRI

30. NHS

31. BIS DCLG

32. BIS DCLG
LEP

1.

4.

5.

6.

7.

10. HEFCE NCUB

1

2

3

4

5

6

11. Catapult

1

2

Catapult

3 Catapult

Catapult

Catapult

13.

14. KTP

KTP

18.

ACE

21.

22. IPO

23.

TTO

25.

31. BIS DCLG

32. BIS DCLG

LEP

1.

4.

7.

8.

9.

1

2

3

10. HEFCE

NCUB

1

2

3

4

5

6

13.

15. ~~Ch/001~~

23.

TTO

1.

2.

REF

REF2014

1

2

3

7.

10. HEFCE

NCUB

1

2

3

4

5

6

16.

23.

TTO

3.

4.

7.

8.

9.

1

2

3

19. TTO

1

TTO

2

TTO

3 TTO

23.

TTO

23.

TTO

24.

25.

26.

25

28.

IPO

20. IPO

22. IPO

TTO

19. TTO

1. TTO

2. TTO

3. TTO

23. TTO

OGI

2015

3.0

nationalarchives.gov.uk/doc/open-government-licence/version/3
Information Policy Team, The National Archives, Kew, London TW9 4DU
psi@nationalarchives.gsi.gov.uk

www.gov.uk/bis

enquiries@bis.gsi.gov.uk

BIS/15/352