

July 2010/14

Policy development

Report on survey

This report analyses the results of the 2009 Higher Education – Business and Community Interaction Survey for UK higher education institutions, referring to the academic year 2008-09.

This report is for information

July 2010/14

Higher Education – Business and Community Interaction Survey

2008-09

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Higher Education – Business and Community Interaction Survey 2008-09

To	Heads of UK higher education institutions
Of interest to those responsible for	Links with business and the community, Research, Continuing professional development, Workforce development, Funding, Planning
Reference	2010/14
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Executive summary

Purpose

1. The Higher Education – Business and Community Interaction (HE-BCI) Survey is in its ninth year and is an essential source of information on knowledge exchange in the UK.
2. The exchange of knowledge described here takes place between higher education institutions (HEIs) and the wider world of business and the community.
3. Data reported here provide valuable intelligence for knowledge exchange practitioners and policy makers alike. The report also provides an in-depth commentary on the extent of, and trends in, knowledge exchange activity in the UK.
4. This report builds on previously published HE-BCI surveys, the most recent of which analysed 2007-08 data and was published in July 2009 (HEFCE 2009/23)¹.
5. In this latest survey, the first to be carried out by the Higher Education Statistics Agency (HESA) as part of the formal Finance Statistics Return, HEIs provided financial and output data for academic year 2008-09. Data regarding strategy and infrastructure (which are not numeric or financial) were available for 2009-10, given they are in place for the start of the following academic year and therefore provide a more up-to-date picture.
6. HE-BCI covers a range of activities, from the commercialisation of new knowledge, through the delivery of professional training, consultancy and services, to activities intended to have direct social benefits. 'Business' in this context refers to private, public

¹ All HEFCE publications may be read at www.hefce.ac.uk/pubs.

and third-sector² partners of all sizes and sectors, with which HEIs interact in a broad range of ways. 'Community' in this context is taken to mean society as a whole outside the HEI, including all social, community and cultural organisations, individuals and the wider public.

Key points

7. Data collected for academic year 2008-09 show an increase in the overall exchange of knowledge between UK HEIs and the public, private and third sectors despite the change and uncertainty in the economy recently. The growth rate – in cash terms – for the UK is around 5.5 per cent, from £2,812 million in 2007-08 to £2,966 million in 2008-09.

Economic context

8. We highlighted in the HE-BCI Survey 2007-08 (HEFCE 2009/23) that results needed to be seen in the context of wider economic conditions that may impact on HEIs' interactions with their partners. We noted then that UK Gross Domestic Product (GDP) growth had been flat for the last quarter of that reporting year. This change in economic conditions was likely then to have affected the rate of growth in HE-BCI indicators (growth in total income in that year was 6.5 per cent in cash terms).

9. For this survey, GDP fell by 2 per cent. Hence this year's HE-BCI growth of around 5.5 per cent in HEIs' total income demonstrates impressive performance in difficult conditions, and may suggest that they have been successful in deploying their knowledge and expertise effectively to respond flexibly to challenges and opportunities presented³.

10. Figures for UK nations show notable variation and reflect the different economic contexts (and HE funding policies) of England, Wales, Northern Ireland and Scotland.

Change in data collection

11. It should also be noted that the process for data collection has been undertaken by HESA for the first time this year and the organisational change has, as expected, led to some anomalies. However, it is agreed that the data are useful and informative as presented in this report⁴.

Income by partner

12. Commercial partners spent less overall in 2008-09 than in the previous year, as may be expected given the recession; public sector clients have increased levels of engagement (see Figure 1). However, 'individuals' and 'other' partner categories both represent activity that could be of benefit to either or both public and private sectors

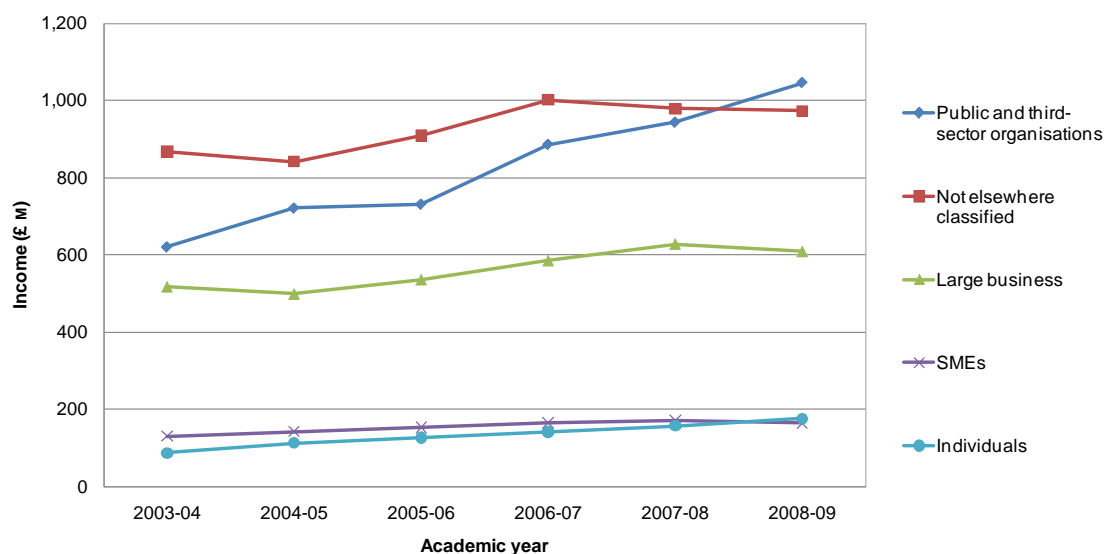
² The 'third sector' refers to voluntary and community groups, social enterprises, charities, cooperatives and mutuals.

³ For more information see www.statistics.gov.uk/cci/nugget_print.asp?ID=192

⁴ Only summary data are included in this report; full data can be obtained from HESA (www.hesa.ac.uk). For more information see paragraph 34.

(although concern for reasonable burden of collection prevents these being further disaggregated).

Figure 1 Total income by partner 2003-2009 (real terms)



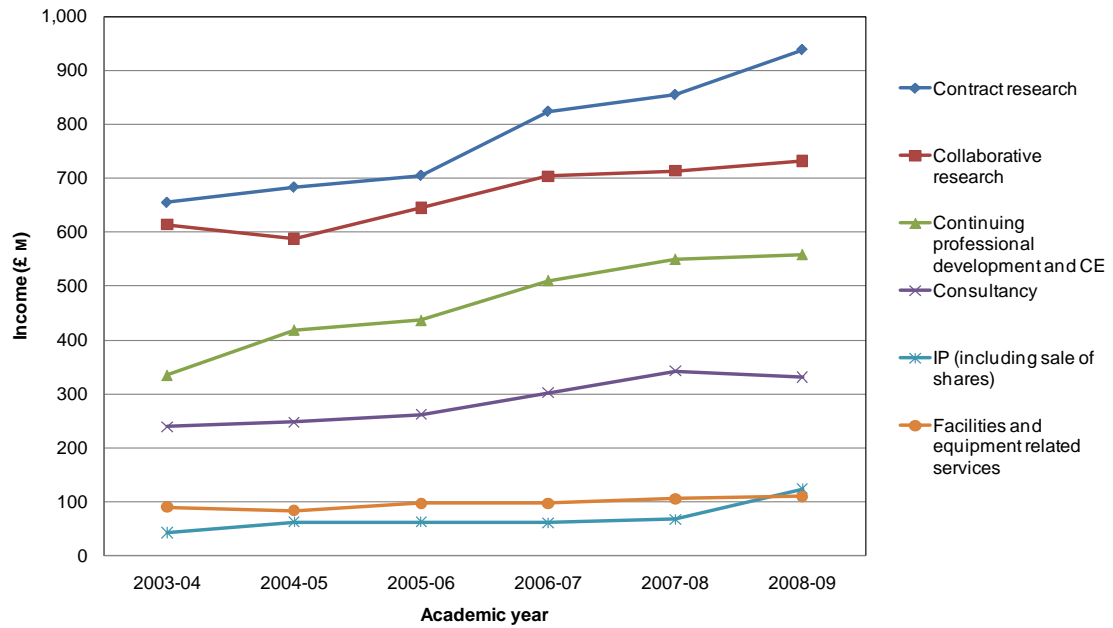
Source: HE-BCI Part B Tables 1, 2, 3 and 4c

Income by activity

13. Collaborative research income has risen by 5 per cent from around £700 million to £732 million (see Figures 2 and 3). However, substantial changes had been made to the format of this survey question so as to disaggregate public, private and in-kind contributions for the first time (see paragraph 84 for further information).

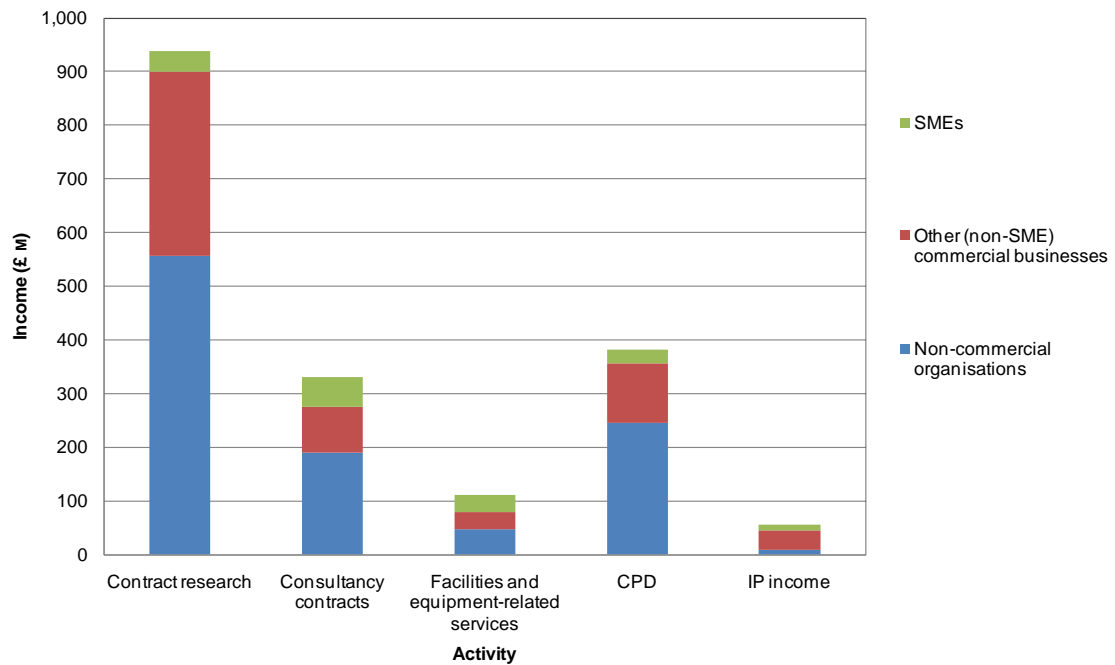
14. Contract research income has also risen by 12 per cent from £835 million to £937 million. This increase is common across partners although the majority of this rise is from non-commercial partners.

Figure 2 Selected HE-BCI income streams 2003-2009 (real terms)



Source: HE-BCI Part B Tables 1, 2, 3 and 4c

Figure 3 Income by activity and partner 2008-09



Source: HE-BCI Part B Tables 1, 2 and 4c

15. In 2008-09 consultancy income fell by around 1 per cent to £332 million from £335 million in 2007-08. However, in this case, commercial activity has reduced slightly with non-commercial clients' spending almost making up for it – a trend that may reverse as the economy recovers.

16. Income from use of facilities and equipment (for example particle accelerators or digital media suites) rose by around 7 per cent overall to £110 million; in this category, only income from small and medium-sized enterprises (SMEs) fell – by around 1 per cent, although the number of interactions increased.

17. Income from continuing professional development and Continuing Education (CE) activity rose by around 4 per cent from £537 million in 2007-08 to £559 million in 2008-09 although, again, the increase was mainly from non-commercial and other partners. The SME and other commercial business groups spent around 9 per cent and 14 per cent less respectively. However, income from individuals rose by around 15 per cent, perhaps reflecting increased (re)training opted for during difficult employment periods. The total learner days delivered to all clients rose by 21 per cent to nearly 4 million during 2008-09.

18. Income from regeneration programmes has fallen from around £238 million in 2007-08 to £172 million in 2008-09. This fall is mostly accounted for by UK HEIs being awarded less from the European Community Structural Funds programmes (the European Social Fund and European Regional Development Fund) following the inclusion of accession states in the EU. UK central government funding for regeneration actually increased slightly, although Regional Development Agency funding – a larger proportion of the total – dropped.

19. Exploitation of intellectual property (IP) continues an upward trend in terms of both income and numbers of interactions:

a. Disclosures, patent applications and new patents granted have all increased, leading to a modest 2 per cent increase in the cumulative patent portfolio of the UK HE sector. Total licence numbers, both software and non-software, have increased considerably; in fact it is likely that the change in reporting practice (via HESA) has provided more complete data in this area. SMEs, commercial business and non-commercial clients all increased the number of licences taken to use IP generated in UK HEIs.

b. Income from IP (excluding sale of shares in spin-offs) has also increased – by 24 per cent – from £45 million in 2007-08 to £56 million in 2008-09.

c. Spending on the protection of IP also rose by over 30 per cent from £21 million to £28 million.

d. Particularly impressive is income from the sale of shares in spin-off companies, moving from £66 million in 2007-08 to £124 million in 2008-09, an increase of 188 per cent. Much of this increase is due to one HEI's sale of a long-established company, but this should not detract from the point that HEI spin-off companies can have a significant impact on the economy; indeed, income from sale of equity is likely to fluctuate, given that this area of activity may be characterised by long timescales and small numbers of large sales.

e. Numbers of new spin-offs⁵ (companies based on HEI-generated IP) fell from 221 in 2007-08 to 191 in 2008-09. This indicator has been volatile over the last decade, because it tends to reflect the end-point of research that may have been conducted 10 to 20 years previously whereas the actual flotation will be affected by the immediate economic environment, such as the availability of seed funding.

f. A more useful indicator is the number of companies that have survived three or more years: 2008-09 data show 982 such spin-offs, an increase of 12 per cent since 2007-08.

20. New enterprises (start-ups) that are not based on IP have increased since 2007-08 with 53 new companies started by HEI staff and 2,031 by new or recent graduates, up 29 per cent and 4 per cent respectively in 2008-09. Start-ups active for three or more years also increased in 2008-09, by 6 per cent and 26 per cent for staff and recent graduates respectively.

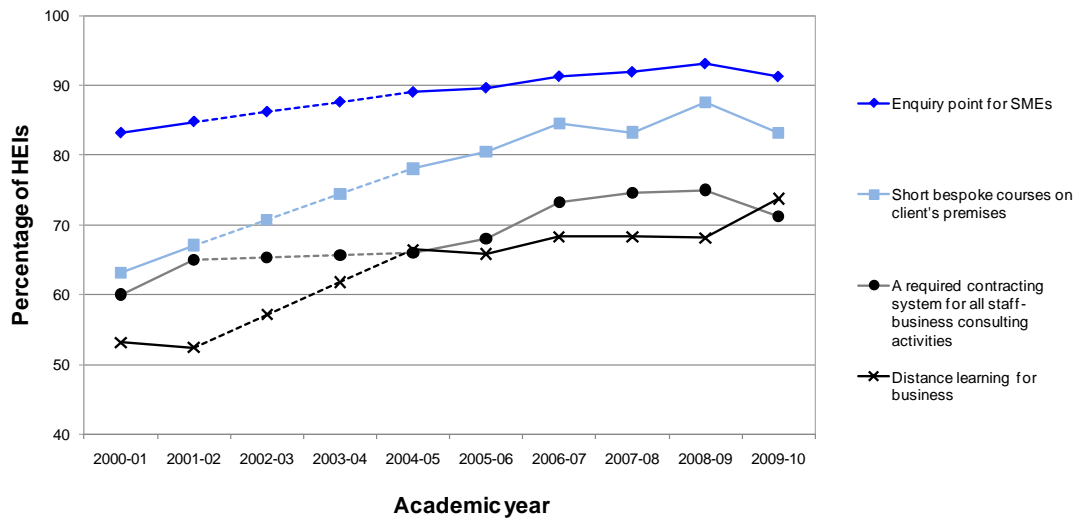
21. HE-BCI also collects data on public events run by HEIs. These illustrate the wide-ranging civic, community and cultural contributions that HEIs make, though they describe only a small part of that range. Over 750,000 people attended free public lectures in 2008-09; representing little change from 2007-08. For performance events (for example music, dance and drama) more people pay to attend events (over 1.6 million attendees) than attend free performances (440,000). Free exhibitions attracted nearly 6 million visitors and almost 750,000 paid to attend exhibitions.

Strategy and infrastructure

22. Some data regarding infrastructure in HEIs seem to show a decline in some provisions of services, such as enquiry points for SMEs (see Figure 4). This may reflect the present economic context or may be due to changes in process and definitions. Further data will be required to confirm this question although it should be noted that provision is still significantly higher than the start of the decade.

⁵ This figure includes companies in which the HEI maintains a stake and those sold outright.

Figure 4 Selected strategy and infrastructure indicators 2000-2010



Source: HE-BCI Part A Questions 11 and 29 (data for 2002-03 and 2003-04 are assumed – see paragraph 31)

Action required

23. This report is for information. No action is required.

Background

24. The aims of the annual Higher Education – Business and Community Interaction (HE-BCI) Survey are:

- to provide data on the continuing development of interaction between higher education institutions (HEIs) and business and the community
- to provide reliable and relevant information to support the continued public funding of this, the third stream⁶ of HEIs' activity in the UK
- to give HEIs good benchmarking and management information
- to develop a source of indicators at the level of the individual HEI, some of which will be useable to inform funding bodies' allocation of continued funding.

25. This survey (for academic year 2008-09) is the first to be carried out by the Higher Education Statistics Agency (HESA) on behalf of the HE-BCI Stakeholders Group including the UK higher education funding bodies; the Department for Business, Innovation and Skills (BIS); the Research Councils; and other representative bodies such as Universities UK, GuildHE and the Confederation of British Industry.

26. This is the ninth annual HE-BCI Survey and, as such, is essential intelligence for all those interested in higher education (HE) and the knowledge economy and society. Data from HE-BCI are used to develop policy by a wide variety of bodies and to inform funding decisions for knowledge exchange and related activities in England, Wales and Northern Ireland. Data are also valuable as management information and support benchmarking for a range of organisations, notably HEIs and their funding partners.

27. The HE-BCI Survey has maintained a high degree of stability since 2003-04, but the transfer to HESA was bound to cause some changes in process. Hence it was agreed to take this opportunity to make some further developments to the survey. For example, collaborative research income is now collected as disaggregated income from the various sources, rather than as a single gross figure as in the past. Several minor adjustments were also made to some questions in part A, to reflect developments in the knowledge exchange landscape such as the increased role of intellectual property (IP) intermediary organisations. For these reasons, extra caution has been taken in viewing data and trends in this report.

28. Analysis is based on all data returned in each year rather than a direct, institutional, like-for-like comparison. This provides the most complete proxy for activity in the UK but can be affected by changes in the number of responding HEIs.

29. Standard practice in HE-BCI survey has been to present the current and previous year's data in cash terms but to adjust for inflation on any time series of three or more years. Given the negative growth in Gross Domestic Product (GDP) during 2007-08, figures should be inflated to provide a true comparison. Therefore there may be

⁶ The other two streams are teaching and research.

occasions where two-year comparisons made in the text look slightly out of line with graphical displays of time series. This approach will be common across official statistics.

30. The time series for Part A was re-calculated in a previous report (HEFCE 2008/22) to improve the usefulness of these data. The data themselves have not been changed, simply the way in which the period they were collected is displayed. Part A time series is now collected and shown in academic years, as with data from Part B. However, the years for which Part A data were not collected are represented with dotted lines in any relevant graphs.

31. It will also be of benefit to consider – in the near future – how to revise and improve the strategy and infrastructure indicators (Part A) given that many of them reflect the position and direction of knowledge exchange from some 10 years ago. Of course there are many useful data that form some of the core time series but the survey must be dynamic in order to justify its continued collection.

32. The survey was originally designed as a single questionnaire. But for reasons of ease and efficiency, the data from 2002-03 onwards were collected through complementary processes: Part A for strategic and infrastructural data and Part B for financial, numeric (time-bound) data. Data from Part A are a snapshot taken at the same time as financial data are collected (after they have been formally signed off by the chief accounting officer), meaning that data from Part A are presented as being a picture of the following academic year (that is, the year in which the report is published).

33. Most data under Part B are collected by partner type: commercial – small and medium-sized enterprises (SMEs) and large; and non-commercial – public and third sector. For some indicators (collaborative research, regeneration and sale of spin-off shares) data are not available by partner and are shown as ‘not elsewhere classified’.

34. All UK HEIs are provided with free copies of HE-BCI data from HESA although others may be required to purchase full tables. HESA includes all HEIs who respond to the Finance Record; HEFCE excludes the University of Buckingham and University Campus Suffolk. These activity levels will have a negligible effect on overall income indicators but may affect proportion calculations (for example, to change rounding). For more information see www.hesa.ac.uk.

England

35. The Higher Education Innovation Fund (HEIF)⁷ is the main vehicle for funding knowledge exchange and enterprise capacity in HEFCE-funded HEIs and is designed to support and develop a broad range of activities that result in economic and social benefit to the UK. Round four of HEIF runs from August 2008 to July 2011. By the final year HEIF will invest £150 million per year.

36. Support for a third stream of funding was initiated in England in 1999, when HEFCE introduced the HE Reach Out to Business and the Community fund to enhance the contribution that HEIs make to the economy and society.

⁷ For more information see www.hefce.ac.uk/econsoc/buscom

37. From 2001 this was succeeded by HEIF, supported by HEFCE in partnership with the then Office of Science and Innovation (OSI) (now part of BIS). From 2003 HEIF incorporated activities formerly supported under the OSI Science Enterprise Challenge and University Challenge programmes (for student enterprise and invention seed-funding respectively).

38. HEIF began as support for projects that could demonstrate innovation and good practice in knowledge exchange, but with greater experience in the HE sector the fund has moved to a formula-based system. Under the third round of HEIF, funds were provided through the combination of competitive projects (where 11 large-scale collaborative awards were made) and a formula allocation based, in part, on HE-BCI data.

39. HEIF 4 is a 100 per cent formula allocation, based on data drawn from HE-BCI and HESA. Every HEI provided a strategy for its knowledge exchange activity and use of HEIF which was approved by HEFCE and BIS, and published⁸; an overview analysis of all strategies showed that knowledge exchange activity had been significantly integrated into institutional core missions (see 'Higher Education Innovation Fund round four institutional strategies: Overview and commentary', HEFCE 2008/35)⁹.

40. In April 2009, HEFCE published 'Evaluation of the effectiveness and role of HEFCE/OSI third-stream funding' (HEFCE 2009/15) in which Public and Corporate Economic Consultants and the Centre for Business Research, Cambridge, examined English third-stream funding and activities to date. The study, conducted during 2007-08, draws conclusions on what has been achieved by third-stream funding in terms of its original aims: to achieve culture change and embed capacity toward optimising the economic and social impact of HE.

41. The evaluation calculates for the first time the value for money achieved by long-term public investment in HEIs working with the economy and society. The evaluation states that nearly £600 million has been put into HE, primarily through HEIF, and estimates that this has generated a minimum of between £2.9 billion and £4.2 billion in value. The evaluation also concludes that there has been significant culture change in HE to embrace third-stream working, although there is still further to go, particularly in terms of academic engagement.

42. HEFCE has continued to work towards improvement in methods of describing and measuring the full range of HE interactions with the economy and society, their impacts and international comparisons, responding to government policies set out in 'Higher Ambitions: The future of universities in a knowledge economy'¹⁰. This is with a view towards improving understanding of the contribution HE makes, the additionality of HEIF and methods for allocating funds to HEIs more sensitively. In partnership with

⁸ For more information see www.ikt.org.uk

⁹ All HEFCE publications may be read at www.hefce.ac.uk/pubs

¹⁰ 'Higher Ambitions' may be read in full at www.bis.gov.uk/policies/higher-education/shape-and-structure/higher-ambitions

Universities UK, HEFCE is funding micro-studies¹¹ into specific gap areas of metrics of knowledge exchange activity such as public policy and enterprise, with a view to developing supplementary metrics for possible inclusion in HE-BCI and HEIF.

Wales

43. In November 2009 the Welsh Assembly Government launched a new long-term strategy for higher education in Wales, 'For our Future: The 21st Century Higher Education Strategy and Plan for Wales', which addresses two key themes: supporting a buoyant economy and delivering social justice.

44. 'For our Future' also tasks the sector in Wales with developing a regional dimension to the planning and delivery of higher education that more fully involves further education institutions and other education providers. The Higher Education Funding Council for Wales (HEFCW) is analysing the outcomes of a consultation on how this regionalisation agenda might be most effectively addressed.

45. In order to take account of this consultation in future third mission funding arrangements, HEFCW has decided to postpone the start of a new three-year cycle of third mission funding from 2010-11 to 2011-12. Instead, the existing three-year funding cycle has been extended for a further year as presently constituted.

46. However, HEFCW has decided to reflect changing government emphases by renaming the Third Mission Fund as the Innovation and Engagement Fund from the start of 2010-11. It is anticipated that when the new cycle of funding commences in 2011-12 it will place a significant emphasis on collaborative approaches to innovation and engagement activities. These collaborative approaches will involve enhanced levels of inter-HEI working and increased partnerships with external organisations from the public, private and third sectors that contribute to economic and social well-being in their particular region.

47. The challenge to HEFCW will lie in encouraging regionally based activity that meets local needs and circumstances where appropriate, but not at the expense of, at the same time, developing greater critical mass in Welsh HE to facilitate its role on the wider UK and international HE stages.

Scotland

48. The Scottish Funding Council funds knowledge exchange from both its General Fund and Horizon Fund. All Scottish higher education institutions receive £70,000 from the General Fund to support knowledge exchange (see 'General fund for Universities in support of teaching and research for academic year 2010-11', circular SFC/11/2010).

49. The Council will announce details of the Horizon Fund funding for knowledge transfer and innovation later this year (see 'Horizon Fund for Universities', circular SFC/12/2010).

¹¹ For more information see 'Demonstrating the public benefits of higher education (benefits statements and metric development micro-studies)' (HEFCE Circular letter 16/2009).

Northern Ireland

50. In Northern Ireland, third mission/knowledge transfer activities are primarily promoted via an adaptation of HEIF which is a joint initiative of the Department for Employment and Learning (DEL) and the Department of Enterprise, Trade and Investment (through Invest NI). Although the programme is very much set in the broad context of UK innovation policy, eligible activities must take account of departmental strategic priorities and reflect the Northern Ireland Regional Innovation Strategy.

51. Funding of around £9 million was approved under round one of NI HEIF to cover academic years 2004-05 to 2006-07. This was delivered via competitive bids from the two Northern Irish higher education institutions (Queen's University Belfast and the University of Ulster).

52. An evaluation of NI HEIF 1 recommended that NI HEIF 2 should continue at the current funding level but with some significant modifications to reflect the approach in the rest of the UK for a more predictable funding stream to allow the retention of highly skilled staff and greater continuity.

53. NI HEIF 2 (covering academic years 2007-08 to 2009-10) is therefore 80 per cent formula-driven with the remaining 20 per cent subject to competitive bids. The programme remains a single, joint DEL/Invest NI initiative with the formula-driven element administered by the DEL and the competitive element by Invest NI.

54. NI HEIF 2 is undergoing a full evaluation which will inform the implementation of NI HEIF 3 for three years commencing in academic year 2010-11, subject to ministerial approval.

55. Following extensive consultations with key stakeholders, the DEL has also developed a Higher and Further Education Collaboration Fund (branded as 'Connected'¹²) to enable the HE and further education sectors to identify and meet, in a coordinated and holistic fashion, the knowledge transfer needs of businesses in particular, and also the wider community.

56. Collaboration between the further education sector and the universities, in particular, is firmly grounded in the recommendations of the Regional Innovation Strategy in which the creation of 'ever stronger links ... between higher and further education and the business sector' is a key commitment; as well as being in keeping with 'Success through Skills: The Skills Strategy for Northern Ireland'¹³.

57. The programme, which commenced in April 2007 with a budget of £3 million over three years, is delivered by Queen's University Belfast and the University of Ulster, in partnership with the Association of Northern Ireland Colleges. The DEL believes this initiative to be the first of its kind in the UK.

¹² Further information on Connected is available at www.connected.ni.org

¹³ 'Success through Skills' may be read in full at www.delni.gov.uk/publications

58. Following a positive evaluation, the Minister for Employment and Learning has given approval for a second round of the programme to run for four years from financial year 2010-11.

Next steps

59. Now the HE-BCI Survey is a formal part of HESA's official Finance Statistics Return (FSR) it may be considered that the data are embedded within normal HE processes. However, as with most data returns, there are still improvements to be made in terms of process and content. These will be balanced against the need to maintain consistency and comparability of survey data (an area where HESA has significant experience), and the need to respond to changing policy dynamics. The stakeholder's group will continue to provide input to the development of the survey and produce annual reports¹⁴. The stakeholders will continue to work with HEIs, policy makers and other organisations, regionally, nationally and internationally, to develop better measures for economic and social impact, and useful indicators for performance.

60. The stakeholders continue to develop the use of international benchmarking data. This includes work with the European Commission¹⁵ and a previous project led by PraxisUnico to consider comparisons of commercialisation activity with data from the Association of University Technology Managers in the USA. Such projects enable international comparisons and benchmarking at national and institutional levels, so stakeholders get greater value from the data in terms of policy development and insights toward improved performance.

Analysis

61. Economic conditions are likely to have an effect on the performance of HEIs in knowledge exchange. The analysis in this section should therefore be considered in the light of negative GDP growth for the reporting year.

Strategy and infrastructure

62. Data relating to strategy and infrastructure collected for 2008-09 mostly show consistent development, although there has been more movement than in some previous years because of the combined effects of changes in the economy and HE-BCI process.

63. The clear commitment to providing 'access to education' as one of the main economic impacts of HEIs is still apparent. There has been a modest increase in HEIs selecting 'support for community development' (to 13 per cent) and a decrease in those noting 'technology transfer' as one of their top three economic contributions – this probably reflects economic conditions as well as broadening of the knowledge exchange agenda.

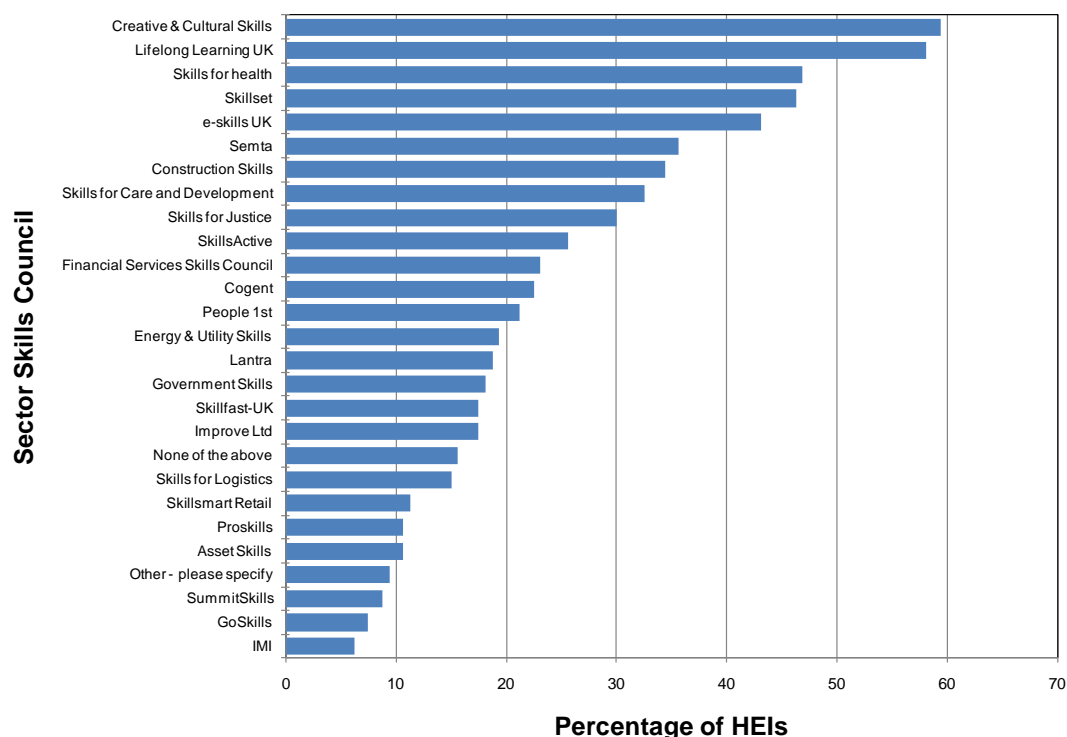
¹⁴ Note that the reports focus on those HEIs supported in their knowledge exchange mission by UK funding bodies and therefore exclude a handful of other HEIs included in the FSR.

¹⁵ For more information see http://ec.europa.eu/invest-in-research/policy/ipr_en.htm#3

64. Standard Industrial Classifications (SICs) have been updated since the last HE-BCI report so direct comparisons are impossible. However, 'education' is the SIC most cited by institutions in terms of external engagement (153 of 158 HEIs). 'Human health and social work activities' and 'arts, entertainment and recreation' were both selected by over 130 HEIs. 'Information and communication', 'professional, scientific and technical activities' and 'public administration and defence; compulsory social security' were all selected by more than 110 HEIs.

65. Although there have been some developments in the Sector Skills Councils, the overall picture remains similar to previous years. As Figure 5 shows, 'creative and cultural', 'education' and 'health' are active with the largest proportion of HEIs, although this is not an indicator of intensity.

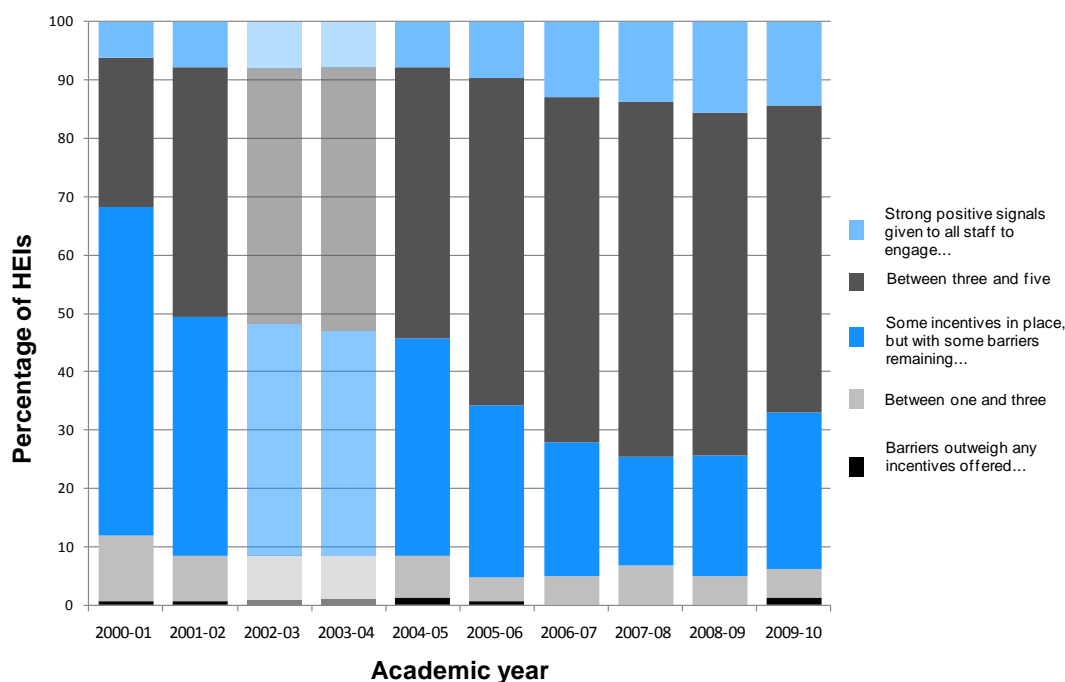
Figure 5 Engagement with Sector Skills Councils



Source: HE-BCI Part A Question 5

66. There are fewer incentives for staff to engage externally than in the previous survey period (see Figure 6). The overall trend is still positive in terms of this indicator, but more analysis would need to be conducted to understand whether this effect results from changes in the economic context or the survey process.

Figure 6 Incentives for staff to engage with business and the community 2000-2010



Source: HE-BCI Part A Question 8 (data for 2002-03 and 2003-04 are assumed – see paragraph 31)

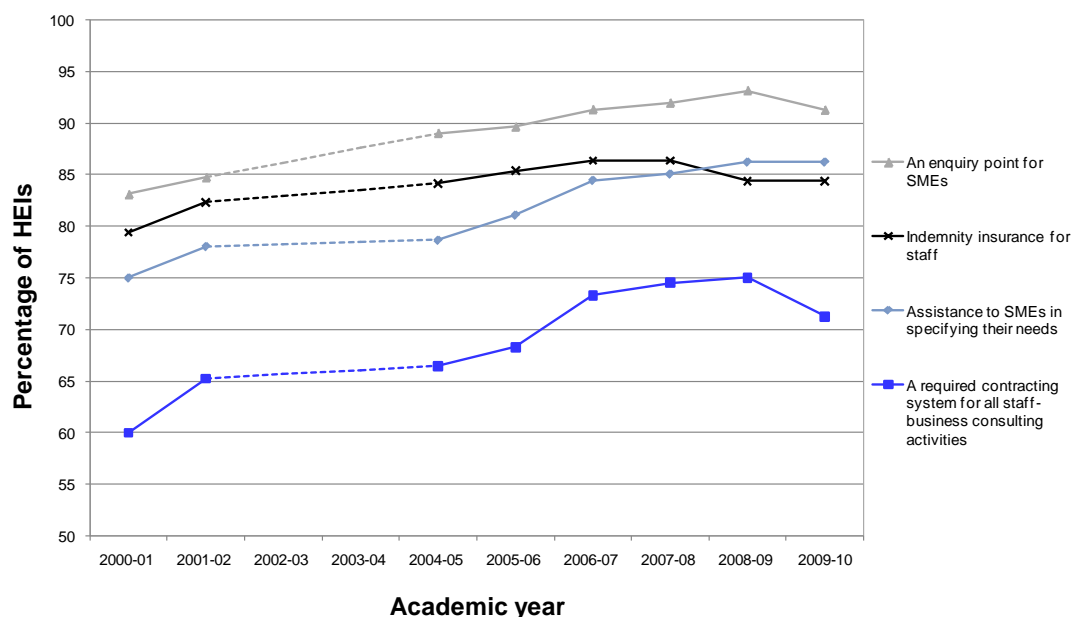
67. A similar, five-point benchmark assessment of the extent to which business support strategy is embedded at HEIs shows a slight decrease in those selecting the top category (from 47 to 43 HEIs). However, there is an increase overall when the top two categories are taken together (from 72 per cent in 2007-08 to 74 per cent in 2008-09).

68. Before the inception of dedicated knowledge exchange support funding, there was evidence that the time it took to identify and engage with appropriate academics was a significant barrier to engagement for external clients, particularly small business¹⁶. Over the last decade HE-BCI has tracked increases in staff dedicated to assisting external partners and facilitating interactions. There has been a small (6 per cent) drop in the number of staff employed in a dedicated business and community role from 7,989 in 2007-08 to 7,553 in 2008-09. Data are broadly consistent across the UK nations.

69. Figure 7 shows a dip in some infrastructure provision such as ‘required contracting systems’ and ‘enquiry point for SMEs’ although ‘indemnity insurance’ and ‘assistance for SMEs’ are both broadly level. Further data would be needed to know whether this is a meaningful trend or simply an effect of the change in process. Overall, the trend since 2000-01 is very positive. These indicators and the number of dedicated staff are best viewed over a time series to ascertain whether the reductions are an anomaly due to survey process or a change in trend.

¹⁶ For more details see ‘Industry-Academic Links in the UK’ (HEFCE 98/70).

Figure 7 Selected infrastructure indicators (2000-2010)



Source: HE-BCI Part A Question 11 (data for 2002-03 and 2003-04 are assumed – see paragraph 31)

70. Not all HEIs have sufficient technology to warrant a dedicated unit of specialists (such as IP lawyers), which has led to a growth of collaboration between HEIs and private sector intermediary organisations. HE-BCI categories have been altered to allow HEIs to respond if they have multiple mechanisms, meaning no direct comparisons can be made with previous data. The majority of HEIs (59 per cent) report in-house capability; 11 per cent rely solely on an external partner; and 13 per cent of HEIs have both internal and external options.

71. For wider external interactions (consultancy and continuing professional development (CPD)) 84 per cent of the sector have a formal mechanism (either internal department, external company or both). The effect appears to be common across the UK with, mainly, specialist colleges having no dedicated function. Data in future years will confirm whether this is a real trend or simply a dip due to confusion caused by the new process and the variety of language used to describe such offices.

72. The collection of data regarding how IP rights are managed has also changed for 2008-09, so direct comparison with previous years is impossible. Many HEIs have more than one option available, so responses sum to more than 100 per cent. The fact that 15 HEIs consider the indicator to be inapplicable is not unreasonable when course material and publications fall under different IP processes (copyrights are in place without the requirement of any application process). The highest response (94) is for IP rights to be handled by an external organisation, with 52 HEIs selecting 'in-house/collaborative' with other HEIs and 79 noting 'other' actions taken.

73. There is a slight drop in HEIs rewarding staff for the IP they produce which, again, is difficult to explain given the overall increase in knowledge exchange activity and funding from 84 per cent in 2007-08 to 82 per cent in 2008-09.

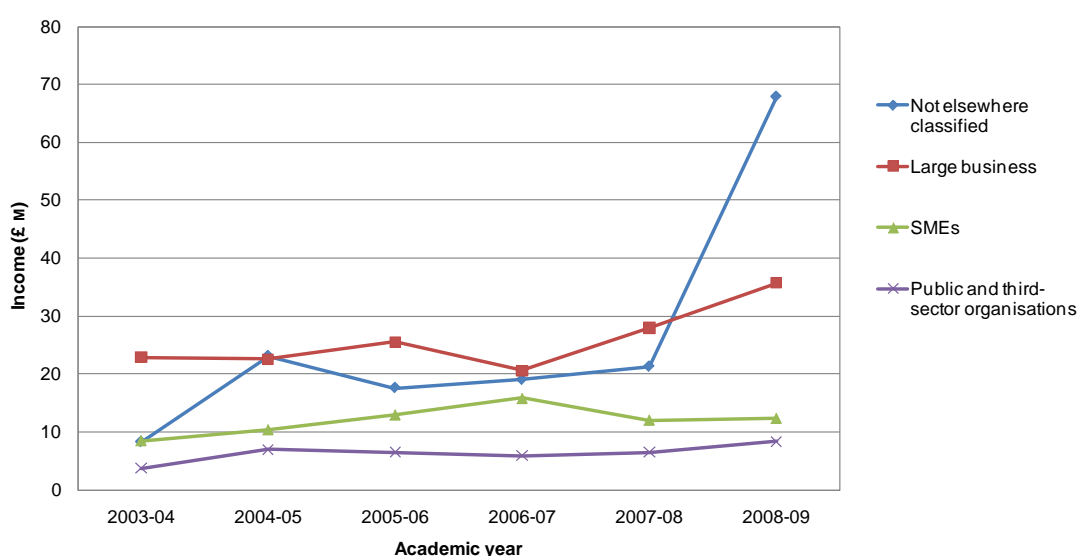
74. There have been slight changes in the number of HEI governors reported in the survey but the proportions have remained unchanged with 33 per cent from a public sector background, 36 per cent having a history in commercial business and 12 per cent from social, community and cultural (SCC) organisations.

Research-based interactions and intellectual property

75. Income from IP has increased notably this year although it must be taken into account that process changes mean the data may be more complete, since previous reports have noted the administrative difficulty of producing accurate data. However, it is reasonable to assume that income from licensing may be less immediately affected by the economic context, because it is usually developed over a period of years, unlike relatively short-term interactions such as consultancy.

76. Income from IP (excluding sale of shares in spin-off companies) rose by 24 per cent from £45.5 million in 2007-08 to £56.4 million in 2008-09; data are broadly consistent across the UK nations. Income from SMEs was broadly similar to 2007-08 while other commercial businesses spent 31 per cent more in 2008-09 (£27.3 million, compared to £35.7 million). Commercial business increases came mainly from non-software and 'other' IP/licences while non-commercial organisations spent less on 'other' and proportionally more on software. Further analysis will be useful given that the range of possible IP interactions is extensive and it is therefore very difficult to capture data in a robust yet relevant (and low-burden) manner.

Figure 8 Income from intellectual property 2003-2009 (real terms)

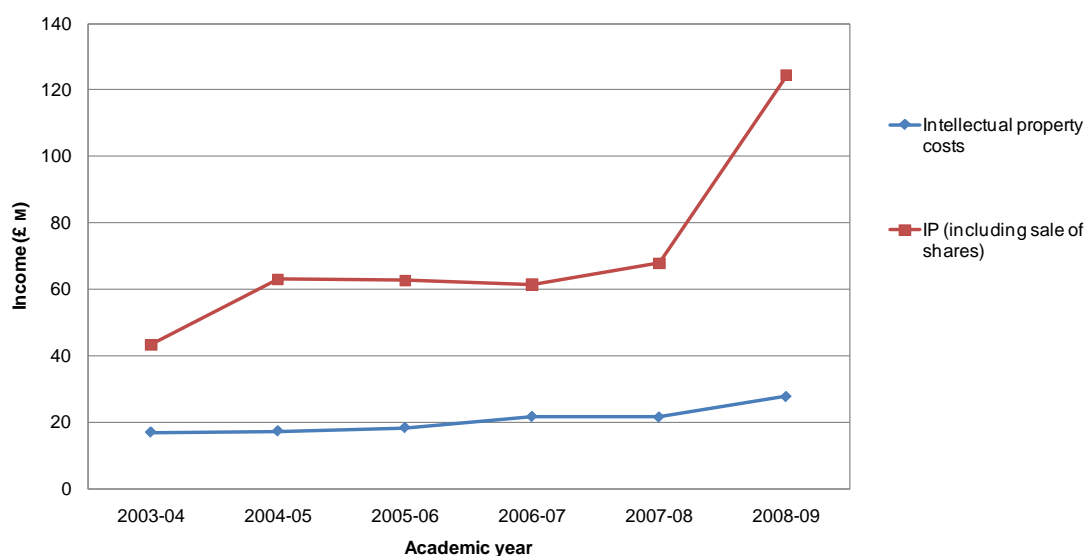


Source: HE-BCI Part B Table 4c

77. The remarkable increase in income from the sale of shares in spin-off companies – from around £66 million to nearly £125 million – is accounted for mostly (42 per cent) by one English HEI selling its share of a well-established company. (But even when those outlying data are removed, there is still an increase in IP income of 9 per cent to £73 million). Income from IP (excluding all spin-off sales) has risen by 24 per cent since 2007-08. Seventeen HEIs received more than £1 million income for their IP, compared to 13 in 2003-04, suggesting that many are making more from their IP portfolios and increasing the odds of further major successes in the future.

78. The total spent on protection of IP has increased by 32 per cent from £21 million in 2007-08 to £28 million in 2008-09 (see Figure 9). These figures include formal fees for patents and specific staff costs associated therewith: for example, patent lawyers. Therefore, they are useful data for a variety of reasons but do not reflect the full cost of research and development. Sixty-seven HEIs reported a profit¹⁷ in terms of income and expenditure on IP in 2008-09, while 34 HEIs reported a deficit. The remaining 57 HEIs did not return data, which may be because many of these HEIs are specialists and so may deal only with different specific forms of IP such as copyright, which cannot be tracked as patents can¹⁸.

Figure 9 Income and expenditure on intellectual property 2003-2009 (real terms)



Source: HE-BCI Part B Table 4c

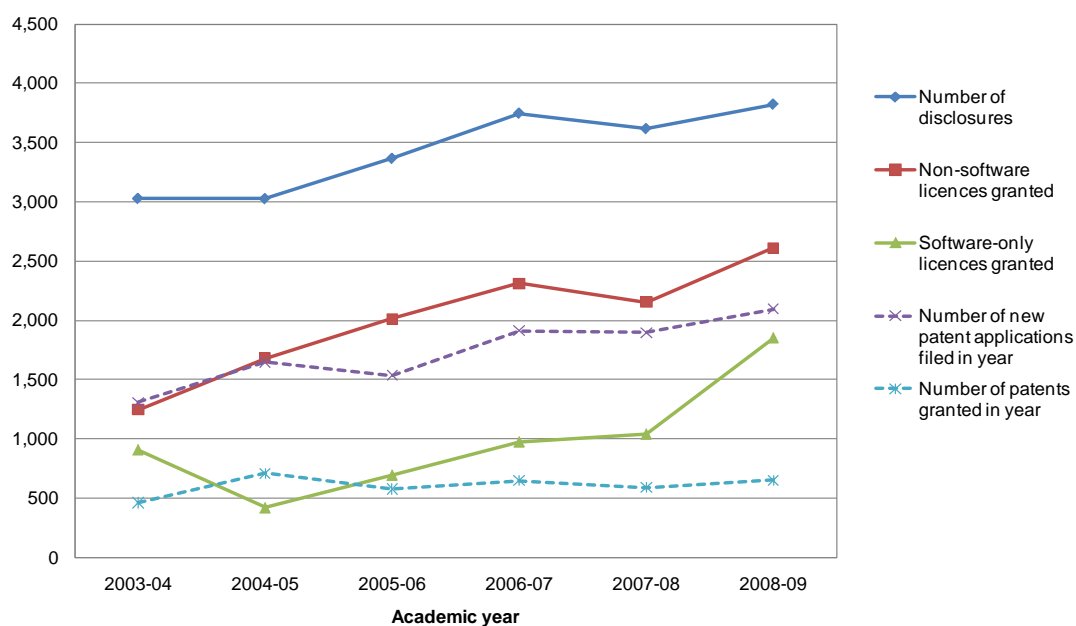
79. As Figure 10 shows, there have been increases in the number of formal disclosures (6 per cent), patent applications (10 per cent) and patents granted (12 per cent) in 2008-09, which is an encouraging continuation of recent trends. However, the

¹⁷ IP income minus IP expenditure only. Cost of research not included.

¹⁸ Further details on the types of IP are available at www.ipo.gov.uk/types

research behind a new patent will have, most likely, been conducted previous to the recession, an effect that may also be present in applications.

Figure 10 Disclosures and patent numbers 2003-2009



Source: HE-BCI Part B Tables 4a and 4b

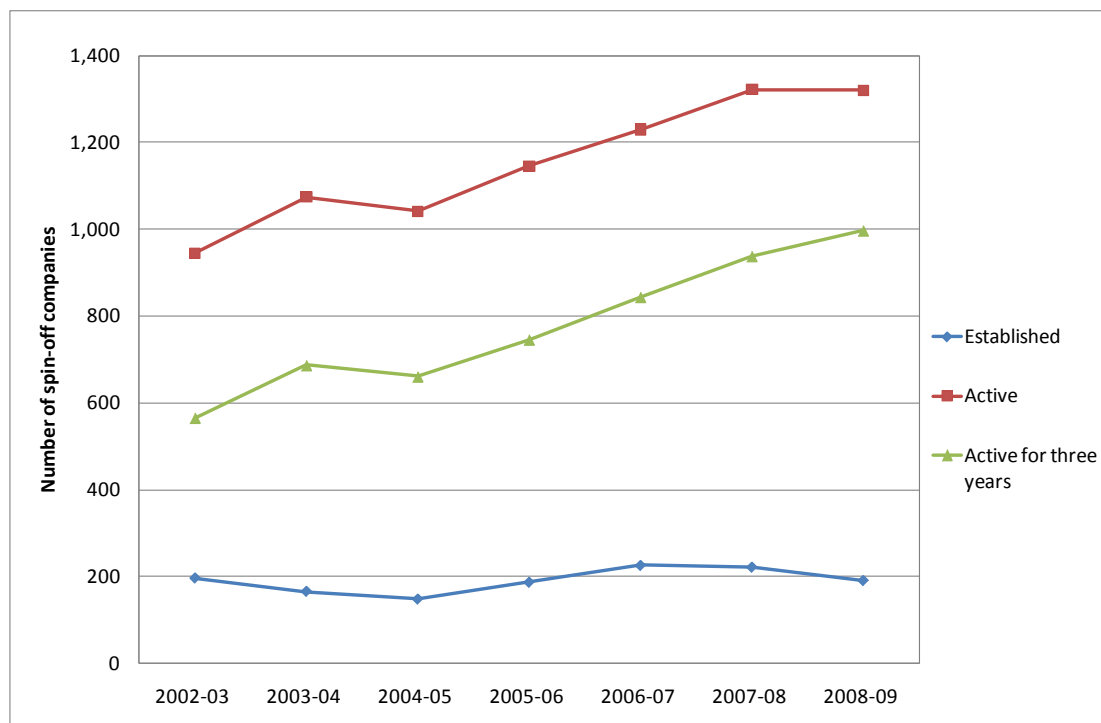
80. Although the licensing of new inventions to an established company is usually the most efficient way of exploiting IP, in some contexts (such as when there is a lack of suitable clients) creating a spin-off company is the best option. Such companies can, after a time, produce substantial returns for the HEI and impact on the economy, as shown by the 2008-09 figures. The number of new spin-off companies fluctuates given the complexity of developing them and the need for appropriate finance and management to sustain them. There is, however, a clear trend of an increasing survival rate of UK HE spin-off companies.

81. Data are collected regarding formal (based on IP) spin-off companies where the HEI maintains (some) ownership – usually the majority of cases – and those that are sold outright; this is useful to see the balance between these methods (Figure 11). For total spin-off numbers these two data sets are summed. In 2008-09, 191 spin-off companies were formed, 14 per cent fewer than the previous year (211). However, there are 997 formal spin-offs that have been active for three or more years, a 12 per cent increase from 2007-08.

82. HE-BCI also collects further performance data such as staffing levels and turnover of the companies and the total amount of external investment received. However, these data in particular must be viewed with caution because they are complex and often incomplete, due to commercial sensitivity and the necessary external nature of companies once spun off. (Formal spin-offs – based on IP – should not be compared with the company vehicles sometimes established by HEIs to manage their commercial

activity.) Data reported for 2008-09 indicate modest overall increases over the previous year in staff (21 per cent) and a substantial increase in turnover levels of spin-off companies (19 per cent).

Figure 11 Spin-off companies formed 2003-2009



Source: HE-BCI Part B Table 4d

83. In terms of enterprise, start-up companies (new businesses not based specifically on IP) set up by staff and graduates increased by 29 per cent and 4 per cent respectively since 2007-08; start-ups surviving three or more years increased by 6 per cent and 26 per cent for staff and graduates respectively. For staff start-ups, both staffing and turnover fell in 2008-09 by 55 per cent and 18 per cent respectively compared to the previous year; for graduate start-ups, staff levels increased by 27 per cent while reported turnover reduced by 6 per cent. However these data must be treated with caution: they are likely to be incomplete, because HEIs are still developing systems to capture data that, by definition, do not exist within central systems as the businesses are external to the institution.

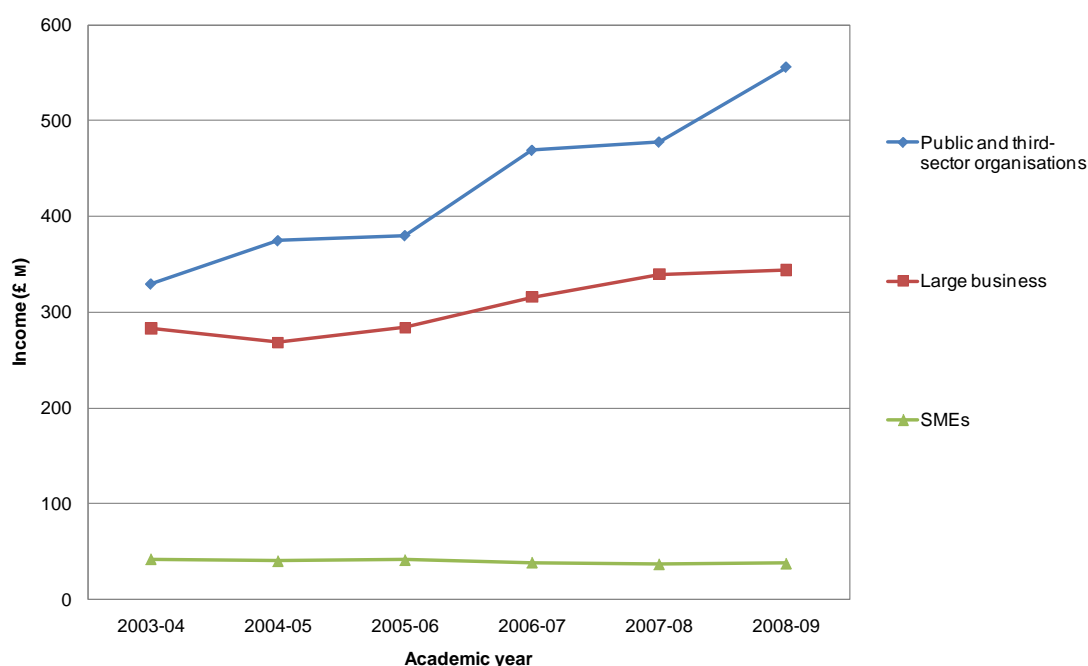
84. While income from IP is a useful measure of an HEI's strategy in commercialising its research, collaborative research may be more useful for understanding the value of long-term relationships between HEIs and the economy and society. Collaborative research is often multi-disciplinary and individual to the context of project and partners; it is rarely linear in process. To complement other sources of data, HE-BCI collects data on a specific subset of collaborative research, in that income should only be returned where the activity has a defined aim and there is input from at least three parties (the HEI; an external partner, commercial or otherwise; and a public project-funder).

85. In previous years, to limit burden, only the single gross figure for collaborative research income was collected and included the public (in this case, project funders), private and non-financial (in-kind) contribution. Such in-kind contributions are not measured elsewhere and are very valuable to provide a complete proxy for the impact of the activity; the difficult of collecting in-kind contributions may, however, reduce the robustness of this data. Given the development and embedding of knowledge exchange it was agreed, following consultation, to disaggregate these data to provide detail of the separate contributions. While most HEIs agreed this was reasonable it represents a substantial change in process which, coupled with the hand-over of the survey, suggests caution is required when viewing these figures as they are novel.

86. Overall, total reported income for collaborative research rose from £697 million in 2007-08 to £732 million in 2008-09 (5 per cent). Of the total reported, £612 million was from public funders (including the HEI's contribution); £37 million and £82 million were contributed as cash and in-kind from external partners respectively (the ratio is therefore 84 per cent public : 5 per cent external cash : 11 per cent in-kind). This indicator will likely require at least one further cycle before being properly informative.

87. Contract research is a more direct transaction where the impact is assumed to be mainly on the side of the external partner rather than providing the mutual benefits of collaborative research. Total income rose by around 12 per cent from £835 million in 2007-08 to £937 million in 2008-09. As Figure 12 shows, the largest part of this increase is accounted for by non-commercial spending (19 per cent from £467 million to £556 million) but – given the economic context – any growth in commercial spending is an encouraging sign of the value placed on HEI-generated knowledge. Commercial spending increased by 4 per cent from £36 million to £38 million for SMEs and from £332 million to £344 million for other commercial business.

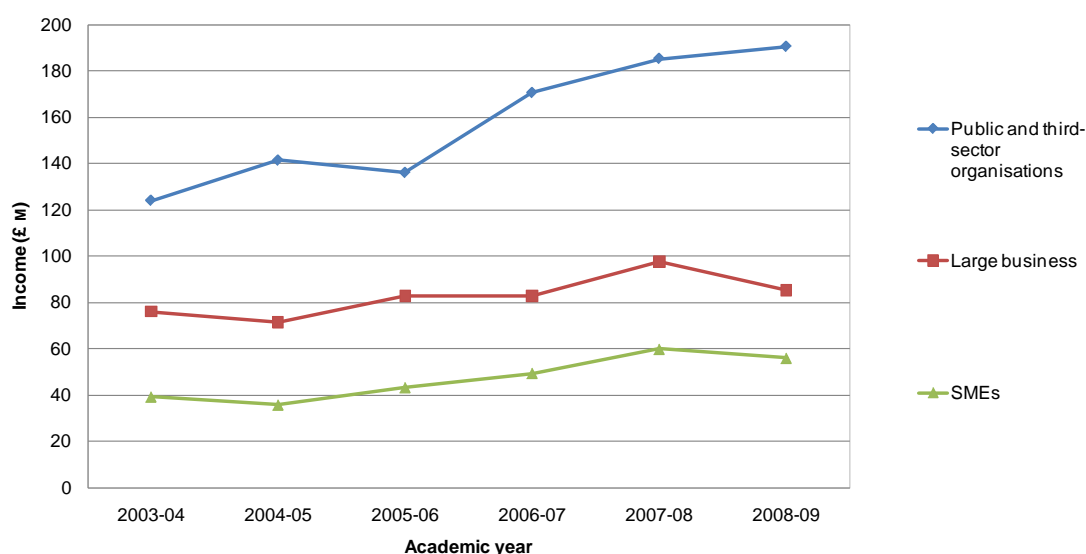
Figure 12 Contract research income 2003-2009 (real terms)



Source: HE-BCI Part B Table 1b

88. Innovative application of existing knowledge (for example across industry sectors) is defined as ‘consultancy’. The knowledge itself may not be new, but it can often provide more immediate innovation. Indeed, this may be a useful route for the development of ‘open innovation’ practice where IP rights are less important than the usefulness of the knowledge to a particular situation or problem. Figure 13 shows that HEIs’ income from consultancy decreased slightly from £335 million in 2007-08 to £332 million in 2008-9 (-1 per cent). SMEs spent 4 per cent less than the previous year and other commercial business reduced expenditure by 11 per cent; non-commercial partners spent 5 per cent more in 2008-09.

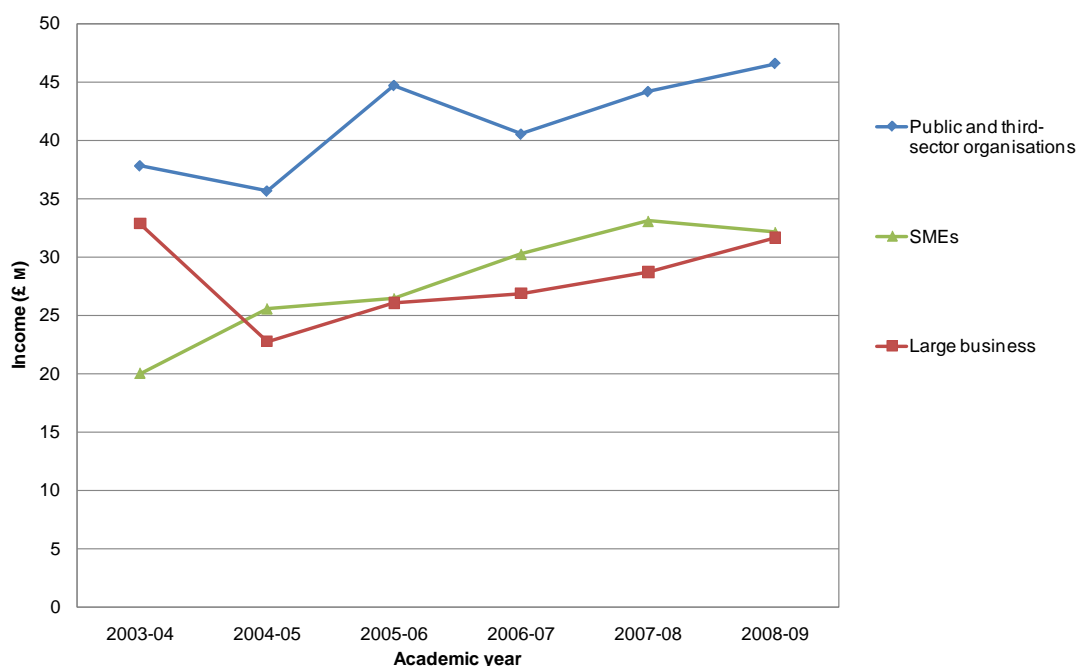
Figure 13 Consultancy income 2003-2009 (real terms)



Source: HE-BCI Part B Table 2a

89. HEIs also possess specialist equipment and facilities supporting their teaching and research activities. By providing access to these resources for partners, there are many benefits including income, relationship building and, for the external partner, access to facilities that they may not otherwise have the scale to secure in-house. Overall, income grew from £103 million in 2007-08 to £110 million in 2008-09. As Figure 14 shows, SMEs spent around 1 per cent less than the previous year although the number of interactions rose.

Figure 14 Facilities and equipment 2003-2009 (real terms)



Source: HE-BCI Part B Table 2b

Social, community and cultural activities

90. Most HEIs see SCC activities as an element of their knowledge exchange, and public and community engagement as part of their core mission. However, use of financial income as a proxy for impact is less appropriate for SCC activity than for research-based interaction and hence there are not such robust ways of describing and measuring HEI commitment to SCC work. Much work has been done to identify the levels of maturity and impact of HEIs' activity on the economy and society but few measures have presented themselves as useful across the spectrum of engagement. Current measures in HE-BCI look at the commitment made by HEIs and count attendees at public events. Although imperfect, these are useful as markers of the importance of such events; these events include a substantial contribution to society from public lectures by pre-eminent academics which may address a wide range of matters, including new understandings of the past, as well as music and dance recitals.

91. Data reported for public events show a mixed picture, with 754,410 people attending free public lectures in 2008-09 despite a 23 per cent drop in academic time devoted to such activity (13,308 staff days). As has been the case in recent years, more people choose to attend performances that carry a (notional) cost for admittance with over 1.6 million people attending performance art events. To illustrate the significant scale of HEI commitment to SCC work: assuming a basic academic consultancy rate of £500 per day, the total academic time devoted to public events equates to over £46 million with a ratio of roughly 3:1 in favour of free events.

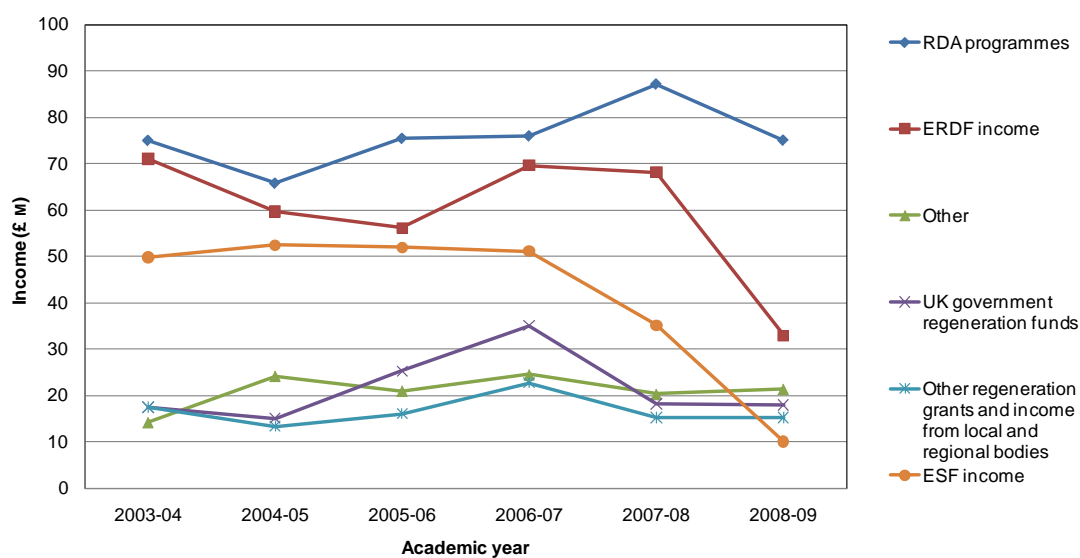
92. Where HEIs benchmark their public and community engagement strategy against a five-point scale, around 56 per cent select either of the top two categories, which represents no change from 2007-08 data.

Regeneration

93. Regeneration activity covers a wide range of interactions from urban renewal to community development. Given the recent economic challenges, HEIs have responded to economic and social needs where they could add value, for example by offering reduced-cost training to newly redundant individuals, or more advice and training to graduates entering an uncertain job market. HEIs are also involved in large-scale European structural regeneration projects, providing the intellectual input to public services and programmes.

94. Total regeneration income has fallen by 28 per cent since 2007-08 from £238 million to £172 million, although as Figure 15 shows, spending by Regional Development Agencies dropped by only 12 per cent from £85 million to £75 million. UK central government funding rose by 1 per cent, although it is less significant in scale (£17.8 million to £17.9 million). Reductions in funding levels – the most significant of which are from the European Regional Development Fund (ERDF) and European Social Fund (ESF) – are roughly similar across the UK, with the exception of Northern Ireland which, overall, increased revenue under this indicator by 7 per cent. It seems likely that some of these trends relate to changes in EC structural funds, with the UK receiving a lesser share with the enlargement of the EU to the accession states (as the poorer accession states will receive a larger element of EU regeneration funding). This reflects an issue raised previously in HEFCE's Strategic Plan¹⁹.

Figure 15 Regeneration income 2003-2009 (ream terms)



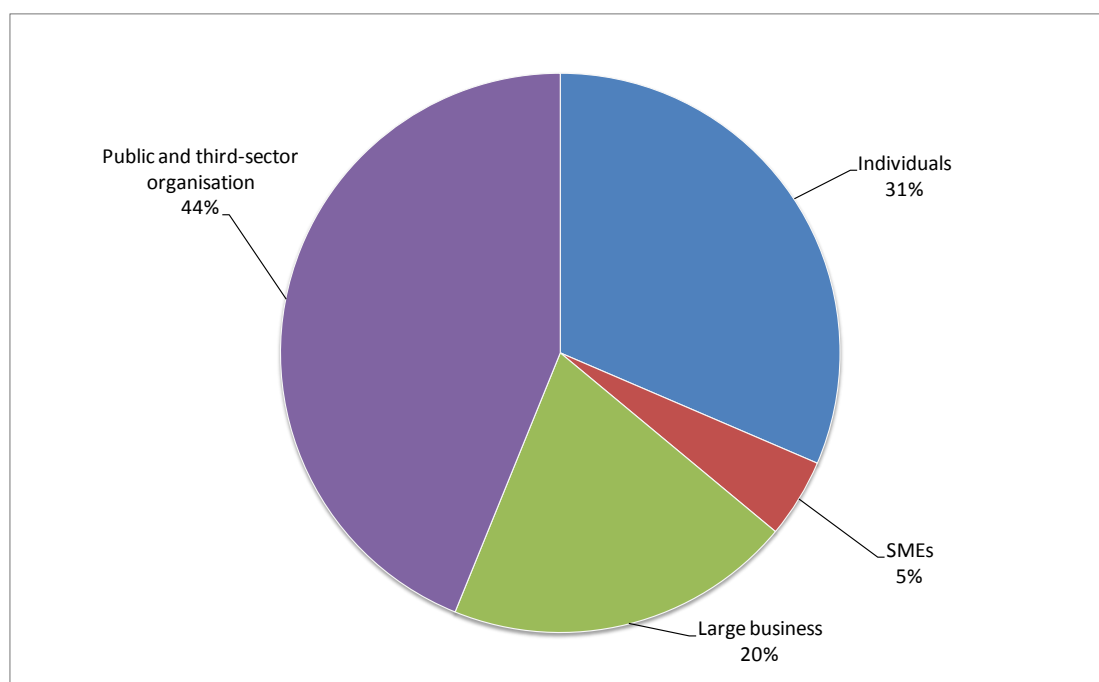
Source: HE-BCI Part B Table 3

¹⁹ 'HEFCE strategic plan 2006-11: Updated June 2009' (HEFCE 2009/21).

Education and continuing professional development

95. As mentioned above, HEIs tend to see education as their primary economic impact; while much provision provides academic credit toward an award or qualification for under- and postgraduates, UK HEIs offer a range of courses for those either in employment or looking to retrain. Some CPD is relatively formal, perhaps to keep up with the latest methods (for doctors or accountants, for example); other CPD is more task-focused and might be provided through such as selecting particular modules from an MBA course. It is, however, very difficult for HEIs to collect complete, accurate data regarding the potential impact of CPD, given that any module may contain learners with a range of motivations.

Figure 16 CPD and continuing education



Source: HE-BCI Part B Table 2c

96. CPD income rose by 4 per cent overall from £537 million in 2007-08 to £558 million in 2008-09 although income from commercial business (SMEs and large businesses) fell by 9 per cent and 14 per cent respectively. There was, however, a 15 per cent increase in CPD and Continuing Education (CE) for individuals from £153 million in 2007-08 to £175 million in 2008-09. These data will include some learning related directly to a business (for example, where the individual is also a sole trader) but also some for those out of work and needing to retrain in changing economic times. Total learner days of CPD/CE (which, it should be noted, are difficult to calculate accurately) rose by 21 per cent from 3.3 million in 2007-08 to nearly 4 million in 2008-09.

Annex A Summary data part B

These data tables may be downloaded in Excel format from www.hefce.ac.uk/pubs alongside this document.

Annex B International comparisons, IP-related

1. As in previous years we have compared the Higher Education – Business and Community Interaction (HE-BCI) Survey data with the Association of University Technology Managers (AUTM) Licensing Survey. For 2008-09 individualised institutional data has been available for US universities and we have aggregated these data in our comparisons.
2. Comparing raw data may not be useful in itself because this does not consider the different numbers and sizes of higher education institutions (HEIs) in each country; any useful benchmark must take these factors into account. For this reason some form of normalisation is needed to allow for valid comparison. In previous HE-BCI surveys we have used research income/expenditure as the most appropriate proxy for unit resource, because this information is available both for US and for UK institutions. Benchmarking is also difficult because definitions used may vary between the two surveys.

Table A Commercialisation activity in the UK and USA, 2008-09

	US universities	UK HEIs
	AUTM survey	HE-BCI survey
Number of institutions	154	158
Total research expenditure (£ million)	24,416	5,946
IP income including sales of shares in spin-offs (£ million)	1,294	124
IP income as percentage of total research expenditure	5.3%	2%
Spin-off companies formed	549	191
Research expenditure per spin-off (£ million)	44.5	31

Notes to Table A

3. The total number of UK HEI spin-off companies in Table A is derived from the HE-BCI survey, including both those with some HEI ownership and those companies that use higher education intellectual property (IP) as a basis for their operation.
4. Institutions are free to use their total block grant funds from funding councils for either teaching or research as they feel appropriate. Since full expenditure details of the block grant are not collected it is assumed, in this calculation, that all of the research block grant funds (from funding councils) are spent on research, and therefore research income from the funding councils has been used as a proxy for expenditure: Higher Education Statistics Agency (HESA) Finance Statistics Return (FSR) 2007-08, Table 5b Funding Council Grants a Grants for HE provision ii Recurrent (Research).
5. In previous years, UK research expenditure has been derived from the HESA FSR, Table 6 Expenditure by Activity: Total research grants and contracts. However, this only

deals with direct costs and so may understate the expenditure by excluding indirect costs. Therefore this year, as with previous, block grant income is taken from Table 5b as a proxy for expenditure.

6. The US figures are from the AUTM survey. The number of start-up companies formed is divided by the total research expenditure. The start-up companies defined in this survey are those dependent on institutions' technology for initiation, and so are equivalent to those spin-off companies recorded in the UK's HE-BCI surveys. Research expenditure is taken over the 2008 US institutions' fiscal years.

7. The exchange rate used is annual average spot exchange rate for 2008 from the Bank of England of \$1.8528 to £1.

Annex C List of abbreviations

AUTM	Association of University Technology Managers
BIS	Department for Business, Innovation and Skills
CE	Continuing Education
CPD	Continuing professional development
DEL	Department for Employment and Learning (Northern Ireland)
FSR	(HESA) Finance Statistics Return
GDP	Gross Domestic Product
HE	Higher education
HE-BCI	Higher Education – Business and Community Interaction (Survey)
HEFCE	Higher Education Funding Council for England
HEFCW	Higher Education Funding Council for Wales
HEI	Higher education institution
HEIF	Higher Education Innovation Fund
HESA	Higher Education Statistics Agency
IP	Intellectual property
OSI	Office of Science and Innovation (now part of BIS)
SCC	Social, cultural and community
SMEs	Small and medium-sized enterprises



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