

REGIONALITY

Final Report to the Higher Education Funding Council for England

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Summary and conclusions

Summary

1. Every English region possesses at least one of the top 20 universities ranked according to QR funding. The overall distribution of research activity and strengths is, however, uneven. The South West, East and West Midlands regions have substantially fewer active researchers¹ in proportion to their labour forces than other regions. Yorkshire and Humberside, the North East, North West and South East have substantially more. The London area also has more but this reflects the fact that many work in London and live elsewhere as well as other special factors associated with the capital.
2. With the partial exception of European Regional Development Funds (ERDF) there are virtually no regionally-based research funds available in England. As a result, while almost all HEIs consider it part of their mission, and also in their own interests, to contribute to the development of their region, regional considerations do not generally have major direct impacts on research strategies. Instead, HEIs engage in regionally based-research when this fits with their more general research objectives. There were some institutions and departments with explicit regional research strategies but these were the exception in the sample we visited.
3. University research is undoubtedly having major impacts on the regions within which it takes place. These impacts arise, to varying degrees, through:
 - knowledge and technology transfer to local businesses and other organisations
 - the provision of consultancy and technical services which often derive from and contribute to conventional academic research
 - post graduate training programmes²
 - academic spin-outs

¹ As indicated by category A staff submitted to the 1996 RAE

² Many would also claim that research contributes directly to undergraduate teaching and that this represents an additional channel for regional impacts. This issue is being considered by another study.

- attraction of inward investment, both because the research base may be of direct interest to an inward investor but also because a leading edge research capability can raise the general profile of the region within which it is based.
4. The region can act as a 'laboratory' for researchers and may also represent a non-academic scientific community for academic researchers to relate to. However, proximity in itself is rarely a major consideration in sponsored research although it appears to be much more important in relation to the technology transfer and the provision of technical and consultancy services. In addition, a regional focus could not sustain a leading edge research capability.
 5. Regional collaboration over core research activities between universities is not widespread. What does take place is generally informal, often on a person-to-person basis, rather than on an institution-to-institution basis. However, there are some examples of universities establishing consortia to provide joint supervision for research training, and some who have campuses in close proximity share resources and spread the cost of some aspects of the basic infrastructure, e.g. libraries, joint provision of security services and sharing of the cost of incubator developments. In part this reflects the lack of importance attached to proximity so far as research is concerned. It may also reflect increased competition for students within a region with the increasing tendency to home-based study. However, this latter factor should not be overstated.
 6. There may be potential for some of the established research led universities to play a developmental role in relation to those developing capabilities. In practice, it would be difficult to promote such interactions on a significant scale; the benefits to the research led universities are unclear and those developing their capabilities are wary of entering any arrangements unless there is perceived equality in the partnership.
 7. We encountered little evidence of equipment sharing on a regional basis. Some of those we consulted believed there was scope for more sharing but there are also serious concerns over how access would be managed and whether this would represent a sensible use of resources.
 8. There are some interesting examples of collaboration between universities on post graduate training and supervision. The arguments for regional collaborations are somewhat stronger here given the possible requirement for students to move between institutions. However, the current regional boundaries do not necessarily delineate optimum areas.

9. More generally, the current English regional boundaries are not meaningful to many HEIs. There are some examples, notably the North East, where the region is cohesive and there is significant activity on the part of the local HEIs relating to the region. However, in most cases HEIs are as likely to relate to others outside as within the region. In addition, where HEIs have adopted an explicitly local focus this is often at the sub-regional level (typically the major metropolitan area) rather than at the regional level.
10. The study has so far identified several ways in which collaboration between universities could enhance research outputs. However, in most cases:
 - there is little evidence of significant inhibitions to collaboration and therefore of the need for special schemes to promote collaboration
 - where there might be scope for special schemes there is little rationale for introducing these on a regional basis. In general, it would be better to allow individual HEIs to decide whether to collaborate and if so with whom.

Conclusions

Support for world class research

11. A regional dimension to funding allocations could be neutral in this respect. As was mentioned above, all English regions have at least one large HEI with strengths across most subject areas. Further support for such institutions could be consistent with regional considerations and also expand the volume of world class research.
12. There are, however, differences between the regions in terms of the volume and quality of research. A policy which sought to redress the differences could result in a diversion of resources from the best funded institutions and leave them less competitive internationally.

Encouraging applicable research

13. Much of the research which has a narrow regional dimension is of a more applied nature and a regional research policy would almost certainly expand the volume of applicable research. The general finding of the study is that regional issues do not drive overall HE research strategies. However, if policy is to be shaped more by economic and social development considerations then there is an argument for a regional driver to policy. The outcome might be more applied research, which may lead to a more direct contribution to local economic development.

Recognising research networks

14. As has been mentioned several times research networks are not, in general, established on a regional basis. Our initial view is that attempts to promote regional networks from the top-down are likely to be counterproductive given the artificiality of regional boundaries in relation to research. In some cases regional networks will be the most effective way forward but this should be a decision for those who will be involved.

Career development and research training

15. We do see scope for regional groupings to provide joint supervision and research training, especially where these involve universities currently developing their research capabilities. The regional dimension is relevant here given the need for student (and staff) mobility. However, there are examples of what appear to be successful groupings at present spanning more than one region.

1. Introduction

Background

- 1.1 This document, compiled by SQW, is the Final Report from the *Regionality* study commissioned by HEFCE (Higher Education Funding Council of England) as part of its fundamental review of its research policy and funding. The HEFCE set up a group to carry forward the fundamental review, which in turn established four sub-groups to look at particular issues. Similar fundamental reviews are being conducted in parallel by the higher education funding bodies for Scotland, Wales and Northern Ireland. After these separate reviews the funding bodies will come together to consider the implications for joint activities (including the Research Assessment Exercise (RAE)).
- 1.2 In all the HEFCE commissioned seven studies to assist the review, the others being:
- Assessment and the Changing Nature of Research
 - How the Research Assessment Exercise has Changed the Research Base
 - International Approaches to Research Policy and Funding
 - Collaborative Approaches to Research
 - The Role of Selectivity and the Characteristics of Excellence
 - The Interface between Teaching, Research and other Activities
- 1.3 Every effort was made to increase the synergies between this project and the others listed above and to minimise the disruption to the universities who contributed to the various studies. We would like to take the opportunity to thank those institutions and individuals who contributed to this study in such a positive and helpful fashion.

The Regionality Study

- 1.4 This present study explored regional issues from two perspectives:
- first, the opportunities and constraints which HEIs face in relation to collaboration with other HEIs in their region
 - second, the contribution that HEIs' research makes to economic and social development within their region and the academic potential of regionally focussed research.
- 1.5 Following this introduction the report has four further chapters. Chapter two describes the methodology employed in the study. Chapter three examines the regional distribution of research activity in HEI institutes. Chapter four reports our findings concerning regional collaboration and chapter five presents examples of the types and impacts of regional research in the HEIs. The final chapter presents our conclusions.
- 1.6 There are three annexes to this report, Annexes A, B and C. Each presents a short report on regional dimensions of research in higher education in other countries, namely the United States, France and Germany respectively.

2. Methodology

2.1 The study is based on the results of face to face interviews at 20 universities (Table 2.1) and associated RDAs. At each university senior management staff usually including the Vice Chancellor were interviewed and asked about the following issues:

- relationships with other HEIs in the region
- integration of any regional strategy with the HEI's national/international strategy
- relationships with regional development bodies
- support and incentives provided to departments/researchers
- strategy towards regional research.

2.2 These meetings were usually followed by a second round of group meetings with research group leaders/active researchers, where the main topics were:

- attitudes towards regionally focused research
- support and incentives from central management
- opportunities and constraints to collaborations with other HEIs in the region.

2.3 We estimate in all 2-300 individuals were consulted as part of the study.

| Table 2.1: Regions and universities included in the study | |
|--|---|
| Region | Universities |
| Eastern | APU Cambridge Essex UEA |
| North East | Newcastle Northumbria Sunderland |
| North West | UMIST Manchester Manchester Met. Salford |
| Scotland | Glasgow Paisley Strathclyde |
| South West | Exeter |
| West Midlands | Aston Birmingham Coventry UCE Warwick |

3. The regional distribution of HEI research activity

- 3.1 At present, regional considerations have no significant influence over the allocation of research funds and the distribution of higher education research between the regions. Nevertheless there are quite substantial differences between the regions. Twenty-five HEIs account for 75% of QR allocations at present. Every region has at least one of these 25 HEIs although 10 are located in the South East and a further four in the London area. In fact the top five, which account for nearly one third of QR, are all in the South East, London or Eastern regions.
- 3.2 Table 3.1 shows the distribution of HEFCE QR funding for each of the standard English regions. London is obviously dominant and the high funding levels in part reflects the concentration of higher education in the capital but also the fact that many of those working in London live elsewhere and are not, therefore, counted in the London labour force. The South West and West Midlands are notable for the relatively low levels of funding and the East and Yorkshire and Humberside enjoy relatively high levels compared with other regions outside London. This in part reflects the number of universities in the Yorkshire and Humberside region each attracting large numbers of undergraduates, and the staff required to teach them wishing to engage in research. As research activity is to a large extent dependent on student demand rather than work force demand, there is no reason to expect a direct link between the size of the labour force and the level of research spending.

| Region | QR (£ per number of the labour force)¹ |
|--------------------------------|--|
| London (GL) | 55.3 |
| South East (SE) | 46.7 |
| Yorkshire and Humberside (Y&H) | 34.9 |
| East (E) | 33.6 |
| North East (NE) | 28.7 |
| North West (NW) | 26.4 |
| East Midlands (EM) | 23.9 |
| West Midlands (WM) | 21.7 |
| South West (SW) | 21.1 |
| All England | 34.5 |

¹ The labour force is defined as those employed and those seeking work. It is very highly correlated with the population. QR allocations are, of course, highly correlated with total HEFCE allocations

3.3 These figures reflect, and interrelate with, a number of other differences between the regions which are shown in table 3.2. Note that the “weighted average RAE grade” is calculated on a numerical scale ranging from 1 to 7, where seven corresponds to a five star RAE rating.

3.4 Table 3.2 indicates substantial differences in the numbers of category researchers per thousand of the labour force. The London figure again reflects peculiarities associated with the capital and the figures for the East are dominated by Cambridge and for the South East, to a lesser extent, by Oxford. But even excluding London there is a range from over 3.15 (Y&H) to 1.89 (SW). These differences tend to translate into differences in research income per thousand of the labour force but the mapping is not one-to-one. More specifically:

- the South East generates relatively more research income reflecting higher levels of research income per category A researcher
- the East generates significantly more research income because of high research income per researcher
- income in the West Midlands reflects lower than average research income per researchers
- the South West as well as having the lowest number of researchers also generates relatively low amounts of research income per researcher.

| Region | Category A researchers per 1000 labour force | Research income per labour force (£) | Research income per Category A researcher (£) | Weighted average RAE grade |
|---------------|---|---|--|-----------------------------------|
| GL | 2.67 | 121.61 | 45.47 | 4.84 |
| Y&H | 1.77 | 51.26 | 29.03 | 4.51 |
| NE | 1.67 | 45.99 | 27.49 | 4.22 |
| SE | 1.54 | 55.45 | 35.90 | 4.93 |
| NW | 1.50 | 42.84 | 28.61 | 4.34 |
| EM | 1.39 | 43.42 | 31.19 | 4.21 |
| WM | 1.27 | 32.21 | 25.43 | 4.32 |
| E | 1.17 | 54.93 | 47.08 | 5.28 |
| SW | 1.04 | 28.12 | 26.97 | 4.48 |
| All England | 1.60 | 56.25 | 35.23 | 4.64 |

¹ The labour force figures are for 1997 and the research income figures for 1996-97. Research income is all sources excluding HEFCE

3.5 Table 3.2 also indicates some differences between RAE grades. In particular the East, London and the South East have significantly higher weighted averages than other regions. As would be expected these are positively correlated with research income per researcher. An analysis has also been undertaken of the different sources of incomes (research councils, industry etc). This suggested little difference between the regions except that the East and South East tended to do well in relation to research council income and the London area in relation to charities. This former probably reflects the success of Oxbridge in relation to research councils and the latter the concentration of medical related research in the London area.

4. Regional collaboration

- 4.1 A major focus of discussions within the universities has been the scope and potential for regional collaboration and whether there are any factors inhibiting collaboration. The results of these discussions are summarised in this section.

Complementary skills

- 4.2 Very few of the universities we have visited can claim to have leading edge capabilities in all subject areas and the need to access complementary skills is widely recognised. This is true in relation to topics which are inherently inter or multidisciplinary but also of mono disciplinary research where co-operation is also the norm. The result is a substantial and growing amount of collaboration between researchers from different organisations. However, the regional dimension to such collaboration is limited for a number of connected reasons.
- 4.3 The first point relates to the importance of proximity. Geographical proximity is very much a second order consideration and researchers instead choose partners on the basis of their expertise and perceived ability to work in partnership. The point was made strongly on a number of occasions that the major incentives are to collaborate with leading researchers and teams and often this means foreign, rather than UK-based researchers. If international collaboration is not possible, the next option is collaboration with the strongest UK universities.
- 4.4 Second, there is an inevitable tension between competition for limited research funds and collaboration. In one sense there is no reason why research competition between universities within a region should be any stronger than between those located in different regions. However, with the tendency towards home-based study, some universities within a region are increasingly in competition for students and there may be a tendency for these attitudes to carry over to research although we would not wish to overstate the importance of this trend as yet.

- 4.5 Third, generally collaboration arises and is sustained on the basis of decisions by individual researchers and instances of formal (research) agreements at the institution-to-institution level are not widespread. We are not suggesting that this is in any way inappropriate, or that institution-to-institution agreements would necessarily be regionally based, but it inevitably means that contacts are more diffused between institutions than they might otherwise be. Within our sample of HEIs the only instance of a formalised research agreements between institutions is a strategic alliance between Glasgow and Strathclyde, referred to as the ‘Synergy’ agreement, which facilitates collaboration between the two universities in areas of research where there is complementarity and synergy as well as physical proximity. Other formal collaborations have, however, been established notably the “White Rose Consortium” which comprises the Universities of Leeds, Sheffield and York. The consortium is making joint bids for research and related funding has been awarded grants by the University Challenge and Science Challenge Funds.
- 4.6 Given these factors it is not clear that increased regional collaboration would raise the overall quality of research. Some commentators have suggested that there are economies of scale to research which regional collaboration might help to realise. However:
- The RAE is an important indicator of research strength and there is a general relationship between size of submission and RAE grade. However, there are also significant differences between subject areas. In addition, this correlation may reflect factors other than economies of scale/critical mass in research. A large department may, for example, have high research productivity because it is able to allocate teaching and research duties more efficiently. If so collaboration between HEIs on research alone will not necessarily enhance research quality
 - in addition, regional collaboration would mean bringing together researchers of differing experience and strengths and there can be no expectation that relationships which hold within departments would also hold between departments.
- 4.7 This last point reflects an issue which was raised in a number of discussions. Within each region there is generally at least one large research led university and a number of others within which capabilities are concentrated amongst a few subjects or are just beginning to develop. Might there therefore be scope for the research led institution to assume a developmental role through collaboration with staff in the universities with lower research profiles? While in some ways attractive there are in practice a number of difficulties with this approach:

- the key issue is what would these higher rated universities gain? The main benefit is likely to be access to able researchers within the other universities but they already have such opportunities and indeed there are examples of individual collaborations between universities with different research profiles.
- universities with lower research profiles also see problems. Several made the point that they welcome the opportunity to enter collaborative relationships but unless they do so as equal partners they are unlikely to gain and might even loose from the relationship, for example by the eventual loss of talented researchers, or at least their ideas. Many made comments to the effect that they were generally treated as second class or "Cinderella" partners, even in circumstances where they were bringing equal expertise to the project. The following was typical;

“projects are more likely to succeed where the more widely recognised research institution is cited as the lead partner. This university has tended to be the subcontractor rather than lead partner in collaborative work, this is the case even where the bid has originated from us.”

- once again it is not clear why such arrangements need, or should be, organised on a regional basis.

4.8 There are some indications that a regional focus, and also the scope of collaboration between HEIs within a region, may be more important in relation to technology transfer than research. The fact that some aspects of the Teaching Company Scheme are managed through regional centres, which are frequently located at universities, gives a local or regional slant to their work and the DTI usually requires SMEs involved in TCS to work with local HEIs. There is also evidence of regional collaboration on schemes such as University Challenge and Reach Out. Collaboration is also taking place outside these schemes. We believe this reflects three main (related) factors:

- proximity is relatively far more important in relation to technology transfer than research, especially where small firms are concerned
- there are economies of scale in the delivery of some of these services, for example the establishment of venture capital funds

- there is also more scope for a division of labour with one HEI being principally involved in the development of underpinning technologies and another in the more routine delivery of technical services to businesses.

Postgraduate training

- 4.9 Research students are recognised as playing an important role in strengthening research capabilities as well as having a direct impact on the volume measure for QR calculations. This creates special problems for universities seeking to develop capabilities since it may be more difficult for them to attract students with the greatest potential. In the past, many have come to arrangements with neighbouring institutions under which members of staff from a research led university will assist with supervision. These arrangements are still common but it is increasingly the case that such universities require some financial recompense and in some cases require the student to be registered with them.
- 4.10 Partly as a response to these trends we encountered a few examples of universities establishing, usually informal, consortia to provide joint supervision. Typically these are subject-based networks which identify staff with expertise in specific areas who are prepared to provide advice to post graduates registered at another university on request. Open lectures and seminars are also common. Given the need for students to move, albeit to a limited extent, between universities there is some logic to regionally-based provision. However, this need not be coincident with the standard regions. There is, for example, a physical geography consortium spanning the East and West Midlands.

Sharing of resources

- 4.11 The universities in our sample who have campuses in close proximity have already made efforts to share resources and spread the cost of some aspects of the basic infrastructure. Examples of such resource sharing include joint use of libraries, joint provision of security services and sharing of the cost of incubator developments. However, we did not find any examples of systematic sharing of laboratory facilities between universities, even those in close proximity.
- 4.12 We did find occasional examples of departments from different universities merging to preserve or create a critical mass in a particular discipline. Indeed we found some enthusiasm for such activities, particularly amongst the larger and more powerful institutions.

4.13 There may be economies of scale in the use of certain items of equipment deriving from its initial expense, and specialised nature, and/or the specialised expertise required to maintain and utilise it effectively. This might suggest an argument for regionally-based provision but in practice we have found almost no examples of equipment sharing within a region, outside of arrangements specifically set up by the research councils. We believe the main reasons for this are:

- as already mentioned, all regions have at least one large research led university. For the vast majority of equipment items these universities will be able to justify internal purchase and use. It may well be the case that total use by other universities in the region is insufficient to justify the cost of setting up and running a shared service
- once again it is not clear why regionally-based provision is called for. For many items of analytical equipment it is perfectly feasible to provide a service remotely using post and e-mail¹ with occasional visits by researchers.

4.14 A number of those we consulted also made a further point which we believe is important. There is a concern that if equipment was made available on a regional basis then there would be a need to ration use and therefore to discriminate between various research projects and programmes and it is unclear how this might be done. Their preference would be for equipment provision to be tied to specific, peer reviewed, research activities and for applications to be handled under existing schemes such as JIF, JREI and direct bids to the research councils. It may be that no single institution could justify sole use of the equipment but this is not considered to be an argument for regionally-based provision.

Relations with the RDAs

4.15 More than one interviewee commented that the priorities of the RDAs seemed to be purely economic with not enough emphasis placed on social benefits such as education and health. However, there are more often instances when the economic priorities of the university and the region can coincide such as the recent debate over the siting of the new Daresbury Laboratory. In this instance the RDA and the Manchester universities worked closely together to try to keep the laboratory in the North West.

¹ The EPSRC, for example, operates 12 national chemistry services, many of which provide such services.

- 4.16 Our research did show however that in all the regions we visited, concrete progress is being made to ensure meaningful dialogue between the RDA and the higher education community. Despite this, the level of co-operation between the universities and RDAs varied quite markedly from region to region. Table 4.1 summarises in broad terms some of these links. Each of the regions we looked at either had, or was planning, some kind of regional University Association and often it was the responsibility of this Association to form relationships with the RDA.
- 4.17 In the North East region relations between RDA (One NorthEast) and the University are close. The five main universities have a long history of collaboration and have formed an Association, Universities for the North East (UNE). This Association is currently preparing a compact with One NorthEast, the North East Universities Economic Compact. The main objectives of this compact are as follows:
- expand the Universities to increase employment and the Universities' contribution to the nation's wealth
 - dramatically accelerate two-way knowledge transfer between the Universities and industry
 - mobilise University skill resources to contribute to the Region's efforts to build more inclusive, sustainable communities.
- 4.18 Expansion of the universities will probably be mainly via three routes. The first is the expansion of the home student base, principally by widening access through outreach and other programmes. Secondly, the Universities intend to collaborate with the RDA to increase the numbers of overseas students. Finally, the Universities intend to work together to co-ordinate and expand current provision of continuous learning, through post experience courses. It is hoped that other activities of the RDA will feedback valuable information to the Universities concerning the requirements of local key businesses with respect to such courses. Note that these all concern teaching rather than research.

| Table 4.1: Inter University relationships and relations with the RDAs | | | |
|--|---|--|--|
| Region | Sample | University Association | Relations with the RDA |
| Eastern | APU Cambridge Essex UEA | No formalised association as yet between the universities in the region though one is planned. There are however individual examples of co-operation APU also collaborates with other colleges in "The Anglian Partnership" | VC of University of East Anglia holds the Chair of EEDA. Chairman of APU Governors a member of the RDA Board. No specific section on the role of the universities in the Economic Strategy "Moving Forward". |
| North East | Newcastle Northumbria Sunderland | Universities for the North East (UNE) ; Originally HESIN (formed 1983). UNE now comprises Durham, Newcastle, Northumbria, Open University, Sunderland and Teeside. | Close relations with the RDA - specific section on the role of the universities in the Economic Strategy "Unlocking our Potential". |
| North West | UMIST Manchester Manchester Met. Salford | North West Universities Association (NWUA) ; (formed 2000) Bolton Institute of Higher Education, Central Lancashire, John Moores, Manchester, Manchester Metropolitan, Lancaster, Liverpool, Open University, UMIST, Salford. | Main channel of communication through NWUA. No specific section on the role of the universities in the Economic Strategy "England's North West - A Strategy Towards 2020". |
| Scotland | Glasgow Paisley Strathclyde | | No RDA but proactive approach by Scottish Enterprise |
| South West | Exeter | Higher Education Regional Development Association ; 12 HEIs and HEs | No mention of universities in first draft of "South West of England Regional Strategy" |
| West Midlands | Aston Birmingham Coventry UCE Warwick | West Midlands Higher Education Association ; all universities in the West Midland region. | No specific mention of role of the universities in the Economic strategy "Creating Advantage". |

- 4.19 The North East Universities have already co-ordinated in many areas concerned with knowledge transfer. They have set up a "first stop shop" called Knowledge House which is located in the Regional Technology Centre, and represents all the universities in the Region. Companies interested in accessing university expertise can approach Knowledge House and be directed to the most appropriate source(s) within the region's universities. The members of UNE are also co-ordinating activities designed to exploit the products of university research in the commercial sector, in particular by establishing dedicated centres to increase interaction between universities and industry.
- 4.20 The resources of the Universities will continue to benefit the region by providing employment as well as a wide range of amenities such as theatres and art galleries. The Universities also intend to collaborate to open up to five advanced centres modelled on Newcastle's Centre for Life, which will focus on specific technologies with excellent commercial potential. These centres will provide facilities for start up business as well as providing training and educational facilities to the wider community.
- 4.21 Relations with the RDA in the North East have no doubt been facilitated by the fact that the UNE has a long history, originally the Association was known as HESIN and was formed in 1983. The situation in the North West is different in that no such long formal association existed previously. Partly to try to improve co-ordination between the North West Development Agency (NWDA), other regional bodies and the region's eight universities, the Universities have recently formed such an Association. These universities, together with the Bolton Institute of Higher Education and the Open University, have formed the North West Universities Association (NWUA). The Association is funded by contributions from each of its member institutions and a grant from HEFCE. It is intended to seek financial support for other activities from the HEFCE and other bodies as the opportunity arises.
- 4.22 The universities in the North West had previously collaborated with the North West Partnership, 100 companies and 30 institutions to develop a Regional Innovation and Technology Action Plan (RITAP). This exercise took place in 1998 and provided a useful first step towards assessing the innovation needs in the North West. The NWDA subsequently agreed to take over responsibility for the RITAP and to convert it to a North West Innovation Strategy (NWIS). The NWDA is currently working with the NWUA to try to maximise interaction between the Universities and local business and the plan is to extend this network to include other higher and further education colleges and research institutes.

4.23 The situation in the Eastern Region is somewhat different in that although there is no formal Association between the universities there is direct representation of the Universities on the Board of the RDA. The East of England Development Agency (EEDA) has recently launched an Innovation and Technology Strategy for the East of England. The Universities of the region feature quite heavily in this document as shown by this summary taken from its Executive Summary.

4.24 Fostering an innovation culture:

- develop an e-commerce strategy for the region
- successfully implement the RITTS programme
- develop a regional system of indicators of innovation performance
- establish a regional innovation consultation and debate
- support new environmental technologies which will encourage innovation and technological development.

4.25 Exploring regional knowledge strengths:

- work with industry to embed the knowledge capabilities of large and smaller successful companies into the region
- champion the development of knowledge-based clusters and networks
- establish a 'partnering office' in Silicon Valley to exploit knowledge links with East of England companies
- promote knowledge transfer (spin-out and spin-in) activities from large companies and universities.

4.26 Improving access to, and the use of, innovation and technology support:

- transfer knowledge from universities to SMEs through a 'knowledge link'
- ensure that Higher Education Funding Council (HEFC) 'third leg' funding bids, to develop the interface between universities and SMEs, are consistent with EEDA strategy

- improve access to information and knowledge through a ‘Techlink’ – a web-based network of information links
- enhance access to the information society by developing infrastructure and by promoting the use of electronic sources of knowledge for all individuals in the region, including access at home, school, libraries and the work place.

4.27 In the three countries for which we undertook desk-based research there were very substantial initiatives at the regional, and sub-regional, levels. In many ways their experiences are not comparable with England since both France and especially Germany have different forms of regional government which influences the amounts and nature of funds available at the regional level. In the case of USA the size of the States gives rise to a wholly different set of opportunities and initiatives at this level. However, in all three countries the importance of university research to the regional economy is recognised and reflected in public funding.

4.28 In both France and Germany, where there is significant regional funding and involvement in university research, bodies have been established to plan and co-ordinate research at the regional level and to ensure there is no unnecessary duplication of effort between the regions. These bodies involve regional and Federal agencies and the RDA would seem to be the obvious agency to participate in such bodies should they be established in the UK.

Summary

4.29 Our study found no tangible barriers to HEI collaboration within or across regions as such. However, there is some evidence that when several universities are located in close proximity, competition for student places may make collaboration less likely in terms of research and teaching. This does not preclude collaboration in other areas such as sharing of resources related to basic infrastructure such as libraries and security services. Such economies of scale seem to be the only perceived incentives to regional collaboration, and this is rarely a factor when considering research collaboration.

- 4.30 We found that relations between the universities as a group, within the region, and the RDAs varied from region to region, but in all cases this appeared to be positive with innovation, the exploitation of the result of research and training issues featuring prominently in most cases. We also found instances within most regions where relations between the RDA and individual universities within the region also varied widely. This is only to be expected as past relations and contacts on an institutional and individual basis will also vary. Our feeling is however, that relations between the RDAs and the universities are most positive when the universities have made particular efforts to present a consensus viewpoint to the RDAs. As such it can be argued that the RDAs themselves are providing an incentive for HEIs to collaborate more closely, particularly in the areas of training and exploitation of research results.
- 4.31 There does appear to be an increasing trend towards collaboration between institutions to help exploit the results of research and we provide several examples of such collaboration in the next section. It is in this area of innovation and exploitation of research that the missions of the universities and RDAs are most closely aligned.

5. Regional research

5.1 This chapter begins with a review of regional research strategies both in terms of HEIs and the RDAs. This is followed by an analysis of the types of benefits associated with university research and an assessment of the importance of the regional dimension with respect to such benefits. The final section stays with this classification of benefits and addresses each in turn illustrating the types of research we encountered and its impacts on the region.

Regional research strategies

5.2 This section reviews the outcomes of our discussions, but we believe it is worth setting out a few general and widely recognised points in relation to HEI research and the potential impact of regional issues. The first and most obvious point is that there are almost no regionally based funding sources for research. The main exception to this is the EU structural funds of which the European Regional Development Funds (ERDF) are the most important. However, their relevance to HEI research is in practice limited because:

- they are concentrated mainly on ‘objective 1’ and (until recently) ‘objective 2’ regions which means that most of the country is not eligible
- the types of activities which are eligible for ERDF funding are limited and mainly restricted to infrastructure investments. In addition, normal HEI research activities are usually ineligible for ERDF funding and it is necessary to demonstrate that a substantial technology transfer component is associated with any research. ERDF will not support specific research projects.

5.3 The organisations with responsibilities for regional development in England have, in the past, been unable to fund HE research directly and the recently created RDAs are in a similar position. Scotland and Wales have for nearly 25 years had their own development agencies with considerably more responsibilities and resources than agencies in England, but their roles in relation to research have also been limited. Both the Welsh and Scottish Development Agencies¹ have been much more interested in technology transfer and training rather than research and have also been restricted in their ability, and willingness, to fund directly activities within HEIs.

¹ The same is also true of SDA’s successor, Scottish Enterprise National, and the network of the Local Enterprise Companies

5.4 The implication is that any influence of regional considerations on research strategies will be for reasons other than the direct funding potential. All of the HEIs we have consulted recognise themselves to be an important part of the regional infrastructure. They have a direct interest in the economic and social health of their region and recognise that they have a role and responsibility to contribute to this. However, in practice an acknowledgement of regional importance does not drive research strategies for the following reasons:

- the regional impacts of HEIs relate to many other activities apart from research, and for many training is probably more important
- many consider that the regional impacts of their research will be maximised through an outward looking (national and global) approach rather than an inward focus on the local region
- whatever the regional benefits might be, research has to generate revenue and, as described above, regional sources are limited.

5.5 The universities in our sample with strong research profiles all stressed that the focus of their research strategy was to be internationally competitive, and if that cannot be achieved, to be amongst the best nationally. As a result, regional considerations do not themselves drive overall research strategies in these cases and their impact depends on the extent to which they can generate revenue and whether or not they contribute to research outputs. The perception of some researchers we consulted was that the RAE gave more weight to fundamental than applied research and it was the latter which was most in demand within their regions.

5.6 There were also several universities in our sample who although not having a formalised regional research strategy, did recognise its importance in particular areas. Typically these areas were health and medicine, urban regeneration and education. However, in some instances emphasis was placed on the arts and humanities as their contributions to local galleries and theatres were viewed as research outputs in their own right. Often, though the University may not have a regional research strategy, individual departments will.

5.7 There were however two universities from our sample, both ex-PCFE, which did have a well defined regional strategy. In both cases the direction of this was very much towards applied research involving SMEs, some large companies and other organisation in their regions. As one interviewee put it;

"there is a clearly defined regional research strategy in which the focus is more towards the D than the R in R&D"

- 5.8 Both these universities stressed that development and maintenance of such strategies was inhibited by the lack of liquid funds associated with this kind of research. Unlike QR, funds from applied research are usually project specific allowing very little room for manoeuvre or forward planning. Also, neither university had aspirations to develop strong reputations in basic research. Rather they were keen to enhance and expand their existing areas of strength in applied research which they believed had a positive impact on the regional economy

The importance of university research

- 5.9 The contribution that universities make to businesses, and other organisations, is well documented and occurs through a number of channels including:

- ***research collaborations***, which can cover the entire spectrum of research from basic through strategic to contract applied R&D. We saw in the previous chapter that regional research collaboration between universities and other organisations is more often than not at the applied end of this spectrum
- ***provision of highly trained individuals***, through normal post and undergraduate courses but also short courses and other forms of post experience training. Such provision can have quite a strong regional dimension in that many graduates form an affinity with the area in which they study and often start their careers there. The link between research and training is, however, complex¹
- ***generation of spin-out companies*** which are almost always small and technology-based, and often the direct result of university based research. By definition this benefit has a strong regional dimension since all UK universities seek to nurture such companies and there are strong incentives to locate locally at least in the initial phase of development. However, the number of university spin-outs is in reality small and it is increasingly realised that this form of commercialisation is only appropriate in certain cases
- ***development of new technologies and ideas within business***. There are some well known examples of ideas which have originated in the HE sector and have been significant wealth creators (e.g. magnetic resonance imaging). Many universities (particularly the new ones) expend a great deal of effort developing technology and processes within local companies, often SMEs

¹ And also the subject of another study

- ***provision of a range of other services*** including consultancy, analysis and testing and information, much of which is based on research and can have direct local benefits
- ***attracting inward investment.*** Universities are seldom, if ever, the major factor for businesses considering new investments but they are often important
- ***special social, economic or physical factors*** relating to the region which represent interesting subjects for academic research. Alternatively, organisations may themselves be part of the scientific community with which academics need to interrelate, in effect an extension of the laboratory.

5.10 We have encountered instances of all the above during the study and our findings are summarised in the next section. However, it is worth making the perhaps obvious point that for these factors to translate into a regional dimension to research requires that physical proximity between the researcher and subject or collaborator is important. There is no doubt that researchers find physical proximity useful in that it enables regular and informal interactions and may also have some beneficial impacts on the costs of research. However, a number of points should be noted:

- while proximity may be helpful it is obviously not essential as is demonstrated by the large, and growing, volume of transnational collaborations. ‘Long-distance’ collaboration and study have always been common and recent advances in electronic communications have facilitated the process
- any benefits of proximity tend to arise at the local rather than the regional level. The time costs of travel within an urban area may be small but this is not the case with travel within a region. In the Eastern Region, for example, there are quite substantial distances between almost all the HEIs
- in part related to the above, travel between regions may be as easy as travel within regions in some cases. For example, communications for some parts of the West Midlands outside Birmingham are as good with other regions as they are within the region. England is a relatively small area and the large urban areas are relatively evenly distributed.

Examples and impacts of regional research

- 5.11 This section revisits each of the channels of benefit defined in the preceding section and provides exemplars where possible of such benefits deriving from research with a regional dimension.

Research collaborations

- 5.12 We identified two main types of regional research collaboration. The first relates to leading researchers being sponsored by, and/or collaborating with, *companies and other organisations within their regions*. Well known examples covered during the current study include collaborations between the Manufacturing Systems Engineering Group at Warwick and the local automotive sector and interactions between life sciences and IT research at Cambridge and local new technology based firms, but there are also many others. This type of regional interaction has a number of characteristics:

- academic outputs include conventional publications in leading journals although they may not be confined to this
- the HEI typically had real research strengths before regional interactions began. The latter have contributed to and consolidated research but have seldom initiated it
- geographical proximity is useful but seldom of key importance to either party. Previous studies we have undertaken of business-academic research links indicate that large companies involved do not place a significant premium on proximity unless the research is of a very routine nature. Research quality and the ability to meet business requirements are the key considerations
- finally, but most important, regional links would not on their own be sufficient to sustain a leading edge research capability and would be unattractive to the academic partner. The point was made strongly to us that leading edge capabilities require academics to relate to the national and international scientific community, including business. A regional focus would lead to research capabilities deteriorating and the HEI would become unattractive to regional businesses.

- 5.13 The second example was *collaboration between HEIs* within a region. In this case, complementarity was often an important driver, such an example is the area of rapid prototyping in the North East where the fundamental technical expertise of Newcastle is complimentary to the more applied skills of Northumbria and Sunderland. Another example, this time from the North West region is described in Box 5.1.

Box 5.1 - Manchester and MMU, Collaboration in Education Research

The Education Department at Manchester University was traditionally very strong in research internationally in the late 80's early 90's (World Bank, UNESCO, UNICEF etc.). This in turn led to a tradition of foreign students. This trend resulted in the Department "losing touch" with local issues to a certain extent. MMU conversely were much more orientated to the local level. Manchester is now consciously trying to strengthen links with LEAs and local schools as they feel they have much to offer at the local level e.g. they are running a course specifically aimed at local Head Teachers. They have also just launched a new taught doctorate for mid-career professionals (Trafford LEA have paid for 8 of their staff to do it with the view of feeding back the results into the Authority's strategy). LEAs have been encouraged by the DfEE to provide more long term provision for those with learning difficulties and they increasingly have budgets for evaluation and policy work. The RDAs may also play an important role in the field of education. They have now formed an alliance with the Business School to attempt to increase the level of research in this area.

The department has a long history of collaboration with MMU and the two departments meet on regular basis to discuss issues of common concern. Manchester had also discussed the possibility of collaboration with MMU in the Teaching and Learning Initiative but this did not happen. However, it was stated that at times the competitive environment and the fact that both departments have been going through restructuring can complicate collaboration.

- 5.14 It was our experience that all those interviewed were convinced that they were aware of anybody "worth knowing" active in their field of research within the region. Whilst we have no doubt this is often true it is not always the case, especially where links may be tangential to the main thrust of an individual's research.
- 5.15 In subsequent discussions the idea of local networking was raised and generated considerable interest. We did find some instances of existing local networks. In Manchester local academics in the field of computation and IT meet regularly for seminars and social engagements and find this very fruitful. This does not preclude international networking and collaboration, in fact the two serve different functions, with the latter more appropriate for the more fundamental research and the former more useful for applied collaborations, often involving local companies.

- 5.16 In the light of the above discussions, it may be that there is scope for more networking at a local and/or regional level. The provision of a website with some limited advertising may act as a useful starting point to kick start the establishment of a more formal network.

Provision of highly trained individuals

- 5.17 This is a major benefit provided by universities. There has always been a tendency for graduates to obtain work in the same area in which they study. This is due to a combination of attachment to the area and increased opportunities to look for positions in the locality towards the end of their studies. It is difficult to extend this argument to research activity as postgraduates will tend to be more mobile. However, many universities do provide opportunities to conduct research which is particularly relevant to the area and its history e.g. UMIST and textiles and paper studies, and so it would seem likely that a similar effect does prevail.
- 5.18 There also appears to be a significant market in the provision of postgraduate courses to industry; Manchester University Department of Education is providing LEA administrators with doctoral research programmes designed to feed into the development of future education strategies. Another example was from UMIST who are providing part time PhDs to employees of Unilever. The regional effects of this kind of impact may be more pronounced in the more isolated regions.
- 5.19 Another trend in recent years has been towards more open access. Many of the new universities in particular, are focussing on students who are from non-traditional backgrounds. Northumbria University for example estimates that 95% of its students have previous work experience of some kind. For those who are involved in research activity their past work experience represents a rich source of contacts and the universities may be in the position to capitalise on this.

Generation of spin-out companies

- 5.20 All the regions we visited were making efforts to increase the level of innovation and all universities saw this as an area in which they could contribute. They also saw the benefits of collaboration between themselves for a number of reasons:
- to spread the risk of such relatively expensive measures as technology centres and incubator units
 - to obtain a critical mass in terms of advisors and administrative support

- to increase the chances of external funding, often from the EU.

5.21 One of the most advanced schemes in terms of co-operation is the Manchester Incubators Partnership (Box 5.2).

Box 5.2 - Manchester Incubator Partnership

Each of the Greater Manchester universities has its own organisations dedicated to start up and spin out. The four universities have recently agreed to combine these resources to form the Incubator Partnership. Each university has a primary role as follows:

- *Manchester University (Manchester Innovation Ltd.) - provision of incubator packages*
- *Manchester Metropolitan University - training, employment, marketing*
- *Salford University (Technology House) - young business infrastructure, training and support*
- *UMIST (UMIST Ventures) - advice & support on ipr and finance*

The intention is to expand the scope of this partnership to include all the higher education institutes in the NW region (the North West Enterprise Network - NWEN).

Development of new technologies and ideas within business

5.22 The Teaching Company Scheme was mentioned at all the universities we visited as an excellent example of how they are able to assist in the development of new ideas and processes within local industry and in particular SMEs. Most TCS programmes are now with SMEs and, in part because of DTI policy, these are usually with a local university. The TCS programmes are often now co-ordinated by a central office which administers the programmes for a number of universities, one of the largest is the Birmingham TCS Centre (Box 5.3).

5.23 A number of EPSRC PhD programmes such as the Eng. D, Postgraduate Training Partnerships (PTP) and some industrial CASE awards have a strong regional dimension. Although there is no requirement for regional linkages it is not uncommon to find such linkages given the need for regular interaction between students, academics and company staff.

Box 5.3 - The Birmingham TCS Centre

The Birmingham TCS was founded in 1996 following a successful bid for start up funding to the Teaching Company Directorate led by the University of Central England (UCE). The Centre represents the TCS interests of the universities of Aston, Birmingham and UCE. The costs of running the centre are now split equally between the three universities and all three are promoted equally to interested companies. The Centre has now delivered over 50 TCS programmes since it was established. Most of the programmes to date have been in engineering related subjects, but many are also concerned with design (including industrial and interior). The Centre is currently trying broaden the subjects offered into non-engineering areas.

The Centre promotes and publicises TCS and acts as a first stop shop for companies. The main functions of the Centre are to identify the needs of interested companies, and match these needs with the relevant academic skills in one of the three participating universities. The Centre then acts as a facilitator of the proposal process.

The Centre is also responsible for promoting KITTS (Knowledge, Innovation, and Technology Transfer Scheme) and KITTS+. In addition to the three universities above the following also participate in KITTS; Warwick (lead partner), Coventry, Keele, Staffordshire and Wolverhampton. These schemes are part funded by ERDF and supply graduates to SMEs for periods ranging from 3-18 months. Academic supervision is also provide as in the TCS schemes.

Provision of a range of other services

- 5.24 Within this type of regional interaction we would include two sub-types which we encountered at a number of universities. The first type of interaction involves research of a much more applied nature, often extending to the **provision of consultancy and technical services**. The main factor which distinguishes it from the previous type of interaction is that, at least in the examples we encountered, it seldom gives rise to conventional academic outputs. However, there are exceptions and we are aware of instances in the social sciences, for example relating to SMEs and local economic development, which have generated conventional academic publications.
- 5.25 We believe that proximity is an important characteristic here. This is both because of the nature of the activities undertaken which sometimes require outputs to be delivered over a relatively short timescale and regular contact with the client. There are also 'marketing' reasons. Clients are sometimes small organisations with low (if any) R&D budgets and it would not be cost-effective for HEIs located at some distance to penetrate this market, much less to deliver to it.

- 5.26 We would note that this kind of interaction is relatively more common amongst the former polytechnics than the ex-UFC sector. In part this reflects their origins and traditions of meeting the needs of local¹ organisations and this kind of applied research often complements training provision. Links are, however, by no means solely targeted on SMEs and we have encountered several examples during the study of large and long-lasting relationships between former polytechnics and large firms. The links between Coventry University and Jaguar and Anglia Polytechnic University and Ford are good examples. It is also interesting to note that both firms also have extensive research relationships with old universities. Such links are not confined to former polytechnics. Salford provides an interesting example of an old university placing a special emphasis on "Enterprise Development" (Box 5.4).

Box 5.4 - Academic Enterprise at Salford

Salford University is pioneering a concept known as "academic enterprise" which aims to thrust the applied nature of research out into the local environment. The university is involved in a great many projects which revolve around development linked to innovation and education of SMEs. The local NWDA is showing a keen interest in many of these developments. One project is GEMISIS, which is a multi-million pound collaboration of corporate institutions and the public and private sectors. The project develops and delivers advanced online applications in the fields of business, education, health and the local community. Offering expertise in cutting edge research, online learning, electronic commerce, knowledge management, and website design, it aims to drive the effective development of user driven applications that fully exploit the benefits of broadband telecommunications. Evaluation, dissemination of best practice, and the creation of commercially viable services are key deliverables.

Major funding for the programme has been obtained from the European Regional Development Fund (ERDF). A vital element of the GEMISIS vision is the establishment of an inter-disciplinary programme involving a large number of postgraduate researchers, funded by the European Regional Development Fund. Projects cover a wide range of academic areas including data telecommunications, information technology, business, construction, environment, health and sociology. All research projects are aimed at seeing how the Information Superhighway can assist in the regeneration of Greater Manchester.

- 5.27 Salford University is working closely with SMEs in the locality to provide business and other support. However, the factors underlying Salford's approach are similar to those of the former polytechnics. In particular:
- limited access to other sources of research funds in these areas, notably the research councils

¹ For most the emphasis is on local rather than regional interactions

- a belief that providing more applied and routine services can help to develop and sustain a research capability
- links between the provision of technical services and training to external organisations.

5.28 The second sub-type is *research related to non-business organisations* where the Region presents an ideal test bed for research. The best, and most common, example is health related research where academics will naturally use the teaching hospital for research purposes. There is also often a close relationship between research departments in this field and the local Regional Health Authority who have increasingly out-sourced their research needs in recent years. An example of this type of relationship is the Health and Social Services Institute at the University of Essex. The Institute receives funding from both the NHS and local authorities including some full time placements within the University. Linking an institute so closely with the needs of the local community can provide an extra source of income to the host university whilst directly benefiting the local community.

5.29 There is similar tendency in education research and the same may also be true of other subject areas. In both cases the research could in principal be undertaken anywhere but the need to interact closely with subjects does mean that proximity is important.

5.30 Training provided by health and education departments, and others, such as business schools and IT departments is increasingly becoming an element of local, regional or national provision of Continuous Professional Development (CPD). This trend is likely to continue and grow as the concept of life long learning becomes more generally accepted.

Attracting inward investment

5.31 Universities are seldom, if ever, the major factor for businesses considering new investments but they are often important for the following reasons:

- business may require direct links with an HEI in order to access research or training capabilities
- they may wish to recruit highly trained staff and perceive better opportunities from locating close to a university
- successful universities, especially those with global research reputations, enhance the general reputation and profile of a region and also directly contribute to cultural facilities.

- 5.32 These inward investment related factors are especially relevant to technology based firms, including small to medium sized enterprises which rely more on external support than larger organisations. As such a leading edge research capability is a particular attraction, in part because of the potential to access this expertise but also because such capabilities assist regions to make the short-list in what is a very competitive market.
- 5.33 The initiative to create in Scotland the Alba Centre, with its associated Institute for System Level Integration (ISLI), was partly driven by the needs of the inward investing US company Cadence. Cadence wanted to ensure there would be adequate post-graduate education and a research base in software engineering. This could not be met by a single institution and it required collaboration between Glasgow, Strathclyde, Herriot-Watt and Edinburgh (Box 5.5). Scottish Enterprise played a key role in this initiative, both in relation to bringing the HEIs together as well as attracting the foreign investor to Scotland.

Box 5.5: The Alba Centre

The Alba Centre grew out of an initiative by Scottish Enterprise, a government economic development body, to develop Scotland as a leading world location for System Level Integration technology. Working in partnership with 4 of Scotland's top Universities in this field (Edinburgh, Heriot-Watt, Strathclyde and Glasgow) and a range of private sector partners both inside and outside Scotland, the vision has become reality through newly created organisations such as the Institute for System Level Integration, the Virtual Component Exchange and the creation of a location dedicated to design activities, the Alba Campus. The Centre provides technical and business advice related to chip technology.

The Centre includes the Institute for System Level Integration (ISLI) which is a unique collaboration and combines the research and teaching strengths of seven departments from the above universities. Established in October 1998, it is the first centre of excellence in this discipline to be established anywhere in the world.

Special social, economic or physical factors

- 5.34 The North East has a very strong cultural identity and this is reflected in a great deal of research related to this cultural and linguistic heritage. This has also led to specific examples of collaborative research between local institutes with common interests such as the North East England History Institute which involves all the members of the Universities for the North of England.
- 5.35 Much of the research at Salford University has been influenced by the local requirements for urban regeneration and the RAE five star Centre for Construction Innovation is currently setting up an office in central Manchester to try to channel some of the results of this research back into the local economy.

5.36 The specific aspect of the region may also be physical. In the Eastern region UEA conducts a great deal of research into predicting and reducing coastal erosion which is an endemic problem in the region. In the area of health research a project in Vision Science at Aston University was able to trace records of scores of local children exhibiting signs of a special form of myopia. The results meant that early referral to specialists ensured suitable treatment.

6. Conclusions

- 6.1 There are substantial differences between regions in terms of the distribution of HEI research activity. Although much of this can be explained by demographic differences, and the distribution of the current HEIs within and across the regions.
- 6.2 Formal research collaboration between HEIs at the regional level does occur but is not widespread. There are few incentives to collaborate in this way, the majority of drivers favouring international or national collaboration.
- 6.3 We found that whilst most regions have Associations of universities, these generally do not provide an appropriate forum to develop meaningful collaborations. The main function of these organisations is to identify areas of common interest and to lobby effectively as a group on specific issues. These bodies are ideally placed to represent the common interests of the region's universities to the local RDA.
- 6.4 The level of co-ordination between the universities and the local RDA varied quite markedly between regions from very close involvement to little tangible interaction. Also within each region there appeared to be some universities who were much more involved with the activities and thinking of the RDA than others.
- 6.5 There does seem to be some requirement for increased local networking at two levels. The first is between neighbouring universities to help discuss common issues and represent a concerted front when negotiating with other organisations such as the RDA. We understand that HEFCE already assists with such activities. The second is to increase networking between researchers in the region, both within the same discipline and also across disciplines. Such activity may possibly be linked to the development of websites.
- 6.6 Regional research strategies at the institutional level are not widespread, but do exist in some of the new universities. Often though, individual departments may have quite well defined regional research strategies. In both cases the emphasis tends to be towards applied research involving local companies or technology transfer initiatives such as the TCS. There is a general feeling, not just in the new universities, that such applied research is undervalued particularly in terms of the RAE exercise.

- 6.7 Views concerning the effectiveness of the last RAE were fairly polarised. Not surprisingly, as a general rule those who did well out of the last exercise were quite happy for the 2001 exercise to employ the same procedures and criteria, while those who did not were in favour of some level of change. Despite the concern over the current form of the RAE there were not many who wanted to abolish it and start again.
- 6.8 There was little concern regarding the proposition that the RAE could be adapted to give more recognition to applied research. Those institutions who currently have high average RAE ratings were confident that they would not be disadvantaged by a shift in that direction. Those with lower average RAE ratings felt that they would benefit from such a change. However there was much discussion concerning difficulties of developing indicators of the "usefulness" of research or some way of measuring user satisfaction with university research outputs. There was also considerable confusion over the detailed criteria to be employed in the upcoming RAE. One example was that views differed concerning to what extent the TCS would be taken into account as part of the assessment.
- 6.9 Another possibility which met with little opposition was the possibility of increased "third leg" such as the recent HEROBC funding. This stream of funding seems to have been very popular both with the old universities and the new. There were some complaints from the new universities that their share was too small, but the general principal seemed popular. Clearly, the ex-PCFC institutions were more likely to have a TCS involvement and favoured a stronger reflection of these considerations in the RAE.
- 6.10 There was also general support for increased support for infrastructure development. Our feeling is that such support should not be allocated on a regional basis but the criteria could be such as to encourage collaborative bids and the leverage of funds from other sources. Similar criteria could also be applied to schemes aimed at encouraging the sharing of other resources such as equipment.
- 6.11 Our interviews showed that for the most part there was very little enthusiasm at for a specific initiative aimed at stimulating more activity at the regional level, either in terms of increasing inter - institutional collaboration, or in increasing the impacts of the institution's research on the region. The phrase "initiative fatigue " was mentioned on many occasions. What was more popular was some form of indirect measures. In the case of the new universities, this tended to be a version of DevR, i.e. funding designed to encourage the fostering of new lines of research. Such an approach would almost certainly have the effect of increasing applied research with regional impacts.

- 6.12 Generally interviewees were not in favour of any transfer of funds from HEFCE to RDAs or other regional bodies. The feeling was that any regional funding should represent a true net addition to funding and not be vired from existing national sources. Although there were two institutions, both ex-PCFCs, which were in favour of such a transfer in principle and saw this as a mechanism to support their applied research with its strong regional orientation.