

Scottish Higher Education Review

second consultation paper

Shaping Our Future



SCOTTISH EXECUTIVE

Making it work together

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Ministerial Foreword



Acquiring and using knowledge and skills is what will make us creative, flexible and prosperous in an ever changing economy. And it is the same processes of research and learning which develop new ideas for communities, for our public services and our businesses; and which push forward the science that improves health as well as wealth; and lead to change and innovation in our art and culture. In the modern economy two thirds of the value of goods is attributable to knowledge. So developing and using our knowledge and skills, both individually and co-operatively, is our best chance to achieve and sustain a Smart, Successful Scotland.

We have to learn well to live better. The complex pathways of modern living are eased by committing to lifelong learning. Education, education, education applies throughout life. Pre-school and primary education ensuring youngsters get the best start in life. Secondary education setting young people on the right road for the rest of their lives. Helping them to make the best choices for when they leave school, whether through training in employment, or through further and higher education: creating the opportunities for further knowledge, higher skills and exploring the new frontiers of knowledge through research and innovation.

Everyone should aim to reach their full potential. Nearly half our young people wish to develop their knowledge and skills through higher education. Many people, whether in work or away from work, will seek to benefit from higher education at different points in their lives.

Scotland's higher education institutions have long been the jewel in the crown of Scottish life, rightly revered as having global recognition and founding roles in the university systems of the USA, Canada, Japan and Australia. The quality and success of our institutions and scholars helped define the international image of Scots and Scotland over the last two centuries.

But the smart, successful nation looks forward and not back. When we do so there is an exciting opportunity for the old and new institutions alike to play a central role in how Scotland thrives. Times have changed, and so have our institutions. They are increasingly well connected to local economies and communities, and other parts of the education sector, spinning-off new firms, creating jobs and contributing to regeneration and cultural partnerships.

Higher education is now for the many and not the few. Participation has deepened and access broadened so that 48% of young Scots participate in higher education and we expect the proportion of the population who will benefit from higher education to continue to grow. While a significant proportion of students engage in higher education in further education colleges, our higher education institutions now touch all of us, both directly for those who work and learn there, but also indirectly by so significantly impacting on our economic opportunities and well-being.

At any time the number of higher education students in Scotland would fill Hampden five times over, double the number of a decade ago, with 1 in 20 of the population undertaking some type of higher education. Nearly 40% of these students study part-time and over a quarter take their courses in further education colleges. Ten per cent of the students in higher education institutions are non-EU international students who, as well as enriching the student experience and offering international networking opportunities for the future, contribute some £70 million in fees and are estimated to spend over £120 million off-campus.

The existence and reputation of our higher education institutions (HEIs) provides the opportunity for students from the rest of the UK, the EU and the world to come here and learn. Their presence enriches us, initiates lifelong contact and friendship, helps develop the capacity to learn and change in the future and helps us reach out and network both at home and abroad.

Well over 50,000 people graduate each year with higher education qualifications and, of those who go into permanent employment and who are Scots, more than 8 in 10 do so in Scotland.

Learning supported by research scholarship brings economic, societal and personal benefits. And there are major economic and social gains from research. This comes through basic research of blue skies and big ideas, and Scotland's institutions have just demonstrated high and growing capacity in this activity by a strong and improving performance in the 2001 Research Assessment Exercise.

In the last three years we have worked hard to develop a pipeline of support for commercialising the benefits of research - through Enterprise Fellowships for graduates, Proof of Concept funding and Knowledge Transfer Grants. Commercialised research to capture the gains from Scottish innovation and invention, out of labs into our businesses, has grown remarkably over the last five years. Our share of spin-out companies, license agreements and number of new patents filed in the UK is higher than our population-based share with some 107 spin-out companies, for example, from Scottish higher education institutions recorded at June 2000.

We are rightly proud of our long history and tradition of excellence in higher education. We need to recognise that we have a capable, ambitious and well run sector, and celebrate the diversity of provision, modes of learning and distinctive missions.

But we live in a rapidly changing world. The pattern of domestic demand is set to change with new demands for part-time, Continuous Professional Development and distance learning provision coming to the fore. In the decade ahead the global demand for higher education and research will increase. Scottish higher education has to be equipped to compete effectively in these international markets. What are the pressures and opportunities that need to be met? And how should that be done?

We need to find the right balance between co-operating and competing, between local provision and global aims. In teaching and research the issues have to be excellence and relevance on the one hand, and effectiveness in the use of resources on the other - not just of money, but of people, of institutions and of places.

I am seeking a positive re-thinking to strengthen our already successful system of higher education. We shall leave well alone where the system palpably succeeds. But there are issues which need to be examined if we are to develop an agreed set of priorities and clear directions for change to shape a learning, earning, connected Scotland.



WENDY ALEXANDER MSP

Minister for Enterprise, Transport and Lifelong Learning

Terms of Reference

To identify how the Scottish Executive Enterprise and Lifelong Learning Department's investment in the delivery of higher education can most effectively maximise the personal, social and economic benefits of teaching and research over the medium to long term, and support a culture of challenge, innovation and partnership in and beyond higher education institutions.

The review should have particular regard to:

- the framework for relations between the Executive, the Scottish Higher Education Funding Council (SHEFC) and higher education institutions – as well as other relevant bodies in the field of lifelong learning;
- SHEFC's performance and how that should be developed.

Recognising:

- the contribution of higher education to the Scottish Executive's objectives for economic, social, cultural and personal development – with specific attention to changing demands for knowledge and skills; and the need to extend the opportunity to benefit from higher education to those groups who have been relatively excluded;
- the need to constantly seek opportunities to develop and improve performance in teaching and research, to stimulate the transmission of knowledge to the wider community, and to be responsive to change;
- the contribution which well-managed and well-motivated staff make to the provision of higher education; and
- the need to make best use of the resources already being made available to the sector.

Executive Summary

Education, education and education applies throughout life. Higher and further education are now the destination of the majority of young Scots and participation in lifelong learning needs to become the norm for all ages.

Higher Education

Higher education is experienced in some way by the majority of Scots. It is important to be clear how its performance in teaching and research contribute to our future prosperity. The advent of the Scottish Parliament, the opportunities and challenges of global markets for teaching and research and the functioning of modern economies, prompt a need to reflect and clarify its role and direction. There needs to be a shared view of what higher education is, what it is for and when and how it can be accessed.

Getting Scotland Growing

Learning involves the development of transferable skills, especially the skill of how to learn and use knowledge. Developing and using our knowledge and skills, both individually and co-operatively, is our best chance to sustain a Smart, Successful Scotland.

Higher education has a symbiotic relationship with the well-being of the economy, with science and skills as key to our economic prospects. Human capital, the capacity of individuals to create, learn and apply skills, is central to Scotland's economic success.

Teaching Today

Teaching and learning are at the core of higher education and the cornerstone of its role in society in developing the market for lifelong learning, responding to the skills needs of the labour market, as well as contributing to social justice, mobility and the reputation of Scotland in the wider world.

As the old millennium drew to a close, there were nearly 260,000 students in higher education courses, double the number of a decade earlier and around 1 in 20 of the population. 40% of those students were studying part-time and 30% were completing their HE course in higher education institutions (HEIs), 1 in every 10 students were non-EU international students who, as well as enriching the student experience and offering international networking opportunities for the future, contributed some £70 million in fees and spent over £120 million off-campus. Well over 50,000 people graduate each year with HE qualifications and, of those who go into permanent employment, more than 7 in 10 do so in Scotland and amongst Scots this rises to 8 in 10.

Learning for Tomorrow

Scotland performs well on a range of indicators on access, participation and retention of students. However, the proportion of students from lower socio-economic groups in HEIs has remained fairly static. There are issues about retention for those from non-traditional backgrounds; improving articulation; the reliance on domestic student intake (largely those from school, studying full-time); the limited development and uptake of continuing professional development (CPD) opportunities; levels of e-access and HE-employer interactions.

Education needs to be responsive to the more diverse needs of learners and build appropriate routeways and opportunities between schools, colleges and higher education institutions. There needs to be consideration of participation rates and targets and what should be expected of HEIs in this respect. Demographic and economic pressures will impact on the direction of change. The patterns of demand for flexible skills, globalisation of the learning market and the need to invest in the learning skills for economic prosperity, demand a flexible and rapid response.

Today's Research

Scotland's HE sector is a successful producer of research measured on a range of traditional indicators. Relative to its size, Scotland has a strong, diverse research base producing 1% of the world's published research with less than 0.1% of the world's population.

With a 9% share of the UK population, in intense competition with UK HEIs, Scotland's HEIs secure 11% of the UK Research Council funding; 14% of UK Government Departments' research funding; 14% of EU research budgets for the UK; 35% of UK universities' royalty income for Intellectual Property (IP). However, this does not compensate, in terms of income and employment, for the low rate of research and development within the Scottish economy.

Tomorrow's Knowledge Transfer

The challenges for extending research excellence in Scottish HE are essentially threefold. Firstly, to address key strategic gaps in research capacity. Secondly, to be more proactive in ensuring excellent researchers in less high-rated departments are encouraged and facilitated to work in collaboration across institutional boundaries. Thirdly, to have more active collaboration strategies across the sector.

The excellent results of the 2001 Research Assessment Exercise (RAE) are a watershed and Scotland needs to continue to celebrate and build on the excellence achieved as well as considering the strategic areas where research needs to be grown. But it is time also to recognise a the key challenge for the coming decade is the need to continue to encourage and support innovation and creative thinking about knowledge transfer.

Today's Governance and Management

The overall governance system for Scottish HE reflects the long evolution of Scotland's institutions as well as their recent growth. It has been configured to protect the legitimate concerns of institutional autonomy and academic freedom, while ensuring some degree of accountability in the use of public funds.

Tomorrow's Leadership

The Executive believes that ten years from now the main concern of government with the higher education sector will be effective management and delivery of public priorities, without comprising the capacity of institutions to innovate and challenge.

The Executive believes that SHEFC, while still acting as the buffer between institutions and Ministers, could nevertheless evolve its capacities to play a more sophisticated role in mediating between sector and the Executive.

Alongside an evolving role for SHEFC, the Executive would expect governing bodies to be even more strategic, taking a forward look and ensuring that there is planning for the longer term. And it will be important that they challenge senior management, help identify opportunities for strategic collaboration across institutions, and support such strategies when they are in the wider interest.

A core aim of change must be to empower institutions, their leaders and staff – to encourage our ambitious organisations to do ambitious things.

1 The Challenge of Inevitable Change: Higher Education, Getting Scotland Growing

Evolving Debate

This paper is the second of two consultation papers being issued as part of the Scottish higher education review. The first paper, issued in October 2001, focused on asking questions about the performance of the Scottish Higher Education Funding Council (SHEFC). The Executive's response to that consultation, looking at some of the detailed issues affecting SHEFC as an organisation, will be published in June. The individual responses to that paper with a summary of the views expressed can be found at www.scotland.gov.uk/who/elld/reportonfirstconsdoc.pdf

This paper now seeks to explore issues concerning the medium to longer term priorities and objectives for the higher education sector in Scotland. The discussion is presented in three parts, this introduction and then two substantive sections. It explores the changing contexts facing both Scotland and the higher education sector and considers the resulting learning challenges, research opportunities, and governance and management development possibilities. Then it proposes, as a basis for debate and dialogue, some of the possible principles and means for moving forward.

Copies of this paper can also be found on the Scottish Executive Enterprise and Lifelong Learning Department's website at www.scotland.gov.uk/who/elld/he_review.asp

Responses can be provided by:

Writing to: **Higher Education Branch**
Enterprise and Lifelong Learning Department
Higher Education and Science Division
2nd Floor, Europa Building, 450 Argyle Street
Glasgow G2 8LG

or by email to: hereview@scotland.gsi.gov.uk

Responses are required by: 31st July 2002.

Higher Education in a Changing World

The term higher education is both fluid and relative. At any point in time it may embrace a range of activities and involve a range of, often contested, definitions. Over time meanings and activities can change¹. The advent of the Scottish Parliament, changing ideas and patterns within the higher education sector, and changes in the functioning of modern economies all prompt a current need to reflect upon and clarify what government and its education partners regard as the relevant content, borders, roles and meanings for the purposes of discussion of the medium to longer term. To move forward coherently there has to be some shared view of what higher education is, what it is for, whom it is for and when and how it can be accessed.

Drawing on consultation at earlier stages of this review, the starting point for this paper is a vision of a higher education sector in Scotland which works as a community of diverse institutions, each providing different mixes of activities core to the current notion of higher education.

Alongside this is the significant and well-integrated delivery of certain types of higher education activity within further education colleges. The powerful presence of higher education within further education institutions is a real strength for Scotland. In recognising the differences between further and higher education institutions, the Executive does not want to lose sight of their complementary missions.

A particularly defining characteristic of our higher education institutions is their relationship with research at the cutting edge. Our HEIs synthesise, consolidate and reappraise what is already known, but critically, they are our main centres for the creation of new ideas, and they also offer rapid access to the best ideas from elsewhere. HEIs are a key connection into global systems of new ideas. Access to these systems depends on the quality of staff and departments. That quality also generates the reputations which attract students, not just locally but globally. Our higher education sector meets both local and global demands – and its success in the latter is critical to Scotland.

The foreword to this paper highlighted that Scotland needs a clearer understanding that higher education is now used, in some way, by the majority of Scots, and of how its performance in teaching and research is so crucial to our future. The current reality of our higher education system is much more modern, diverse and dynamic than the public image. The modern reality is of a system constantly taking forward both research and teaching quality, growing in scale, building links with the wider community and more connected to the Scottish economy. Scottish higher education is a system in transition. But whilst some institutions are sharply clear about their future missions, others feel held back by a degree of uncertainty about what is expected from them by the public funders. This paper sets out, for discussion and debate, the directions of development for the sector which the Executive believes would best serve the Scottish interest.

¹ The statutory definition of higher education taken from Section 38 of the Further and Higher Education (Scotland) Act 1992 is set out at Annex A.

Despite recent growth and change there are major challenges within the higher education sector. The recent Research Assessment Exercise² indicated the marked improvement and high quality of research in Scottish higher education in general – but it also revealed the need for improvement in key areas of research. And it gave little indication of how researchers were building relationships with the wider community. Research in Scottish HEIs could improve further and a stronger culture of engagement with potential users could be developed.

Prevailing patterns of teaching and pedagogy are being challenged by new patterns of lifelong learning, new technologies and competition from globalising sectors of higher education. Being good only in Scotland, playing only to local markets and roles, will not be a sustainable option for our higher education sector taken as a whole. Scottish higher education cannot thrive without a major international profile, but that profile has to be sustained within expanding, competitive and global systems. That is the bottom-line challenge. Meeting it will require clarity and support from the Executive.

Getting Scotland Growing

In recent years there has been a growing clarity about some of the newer, or more newly recognised, roles of higher education, and the sector's symbiotic relationship with the well-being of the economy. Economic prosperity provides the resource base for public support of higher education institutions. HEIs, through strengthening skills, creating knowledge and developing the science base, can have major impacts on paths to prosperity. The recognition and development of these beneficial linkages is a key Executive concern for the future.

The emphasis on science and skills as key to our future economic prospects is neither an exclusive nor a short-term view. The Executive recognises, perhaps more than ever before, what a key integrative system higher education is for Scotland. Higher education has an impact on understandings of culture and civilisation, history and identity, justice and good society. Relevant research informs individual citizens and good public policies, as well as business. Its impacts are not ephemeral but concerned with a longer term of happier lives, better places and stronger environments. Culture, identity, social justice and environmental sustainability are all core concerns of the Executive and the Executive looks to higher education to continue to shape progress for Scotland, to help us with a dynamic understanding of our world.

² The RAE is a five-yearly, UK-wide exercise which measures the quality and volume of research in higher education institutions.

In Scotland the economic challenge we face is very great. Getting Scotland growing again is at the heart of the Scottish Executive's agenda. In the last half century Scotland has only surpassed the growth rate in the UK in a few isolated years. It has been a time of relative under performance in commercial research, the formation of new firms and productivity growth. All the evidence of the last decade is that productivity growth in Scotland, the best measure of how able we are to translate resources into goods and services of value, is lagging well behind the OECD average. This established trend will have to change if Scottish higher education is to exist in a thriving context which can support global aspirations. Without discarding old strengths and other sectors of interest, the future emphasis of change has to be aligned with the imperative for science and skills for Scotland.

National and regional economies face essentially the same global challenges as the higher education sector. It is not just, nor even primarily, in higher education that international competition is intensifying, pricing is competitive, markets are linked electronically, and financial and human capital are increasingly globally mobile.

Human capital, the capacity of individuals to create, learn and apply skills is central to economic success. Lester Thurow³ has argued that "in this century brainpower and imagination, invention, and the organisation of new technologies are the key elements in economic success". He concluded that "Today knowledge and skills now stand alone as the only source of comparative advantage". Other factors may matter, but there is near universal agreement that the interface between science and economic policy in the scientific revolutions which dominated the last century, are not only the base for further scientific breakthrough, but also likely to be the dynamic engines of wealth and prosperity. Not just to do new things but to do what we do already, but better.

To raise Scotland's low rates of productivity growth and business innovation, more new ideas will need to find their way out of labs into businesses based in Scotland, so that in future 'invented in Scotland' is also 'made in Scotland'. Whilst employment has grown strongly in Scotland since 1997, the Executive is all too clear that the changing opportunities of the knowledge economy and intense competition will mean that the Scottish labour force has to be knowledgeable, well-trained and equipped with general life skills if it is to adapt and earn more. Higher education institutions have a key role to play in shaping future skills and future firms. That is why enterprise and lifelong learning have been brought together in a single department and have embarked on a series of initiatives to promote better integration. And there must be potential for even greater synergy with the Enterprise Networks and with other initiatives sponsored by the Executive.

³ Source: Lester C. Thurow: *'The Future of Capitalism'*, page 279 (Morrow 1996)

All three of the core objectives of our enterprise strategy are significantly dependent on the activities of our higher education sector. Growing businesses, better skills and global connections all emerge from higher education activity. It is a consequence of global patterns of development that science and skills are not only a core, long-term challenge for Scotland, but also a key emphasis of change in policies for the higher education sector. This is about fashioning Scotland's future place in the world and ensuring the prosperity that will let higher education flourish in the long-term. It cannot be left to chance and inspired individuals, as has been the case too often in the past. We have to value, align and resource the relationship between higher education and enterprise, so that it is a core concern, rather than simply an interesting margin.

The Immediate Context

Lifelong learning has had a high profile since devolution, and higher education has had a very important place in the Executive's agenda from the outset. In addition, the Parliament, in particular the Enterprise and Lifelong Learning Committee, has stimulated debate and interest, with the recently published interim report of the Committee's inquiry into lifelong learning⁴.

This is reflected in a substantial list of policy change and innovation since the establishment of the Parliament in 1999. Since then, resources allocated to SHEFC and SFEFC have risen by 15% and 23% respectively⁵. 'Proof of Concept' funding has been put in place to link enterprise and higher education. The student support system has been radically revised and measures to support wider access put in place, with support for students in further education and higher education more closely aligned.

In addition, the last two years have seen the creation of bodies such as Careers Scotland, Future Skills Scotland and *learnirect scotland* to provide better, relevant information for both the users and suppliers of higher education and strengthen the demand for lifelong learning in all forms. Along with the input from schools and colleges, these bodies are all important contributors to the more connected context in which Scottish higher education now operates.

The high profile of higher education in Scotland means that this review takes place alongside a number of other relevant inquiries and reports. The Executive will seek to link closely with these where appropriate and use insights and outputs from these to inform this review. These include:

- the Enterprise and Lifelong Learning Committee's (ELLC) inquiry into Lifelong Learning, (interim report published in March 2002);
- *A Smart, Successful Scotland: Ambitions for the Enterprise Networks* (Scottish Executive, January 2001);

⁴ Enterprise and Lifelong Learning Committee's interim report on Lifelong Learning (March 2002).

⁵ This does not take account of funding transferred in respect of newly designated institutions (Bell College and UHI Millennium Institute) and funding for Scottish places at the Open University.

- *Research and Knowledge Transfer in Scotland*, (SEn/SHEFC Joint Task Group, March 2002);
- SHEFC's Advisory Group on Strategy;
- *The Supply of People with Science, Technology, Engineering and Mathematical Skills* (a report commissioned by the UK Government, April 2002);
- *A Science Strategy for Scotland* (Scottish Executive, August 2001) and the ongoing work of the Scottish Science Advisory Committee;
- The Quinquennial Review of the UK Research Councils being conducted by the UK Government;
- The forthcoming UK-wide review of the Research Assessment Exercise by the Funding Councils; and
- The report by the ELLC into SHEFC's reviews of Teaching and Research Funding (October 2001).

With so many aspects of higher education under examination, the Executive recognises that it is important to stand back from the specifics and think hard about fundamental principles and choices. That is what this paper seeks to do.

Change is also being driven by the higher education institutions themselves. In preparation for this paper, there have been discussions with representative groups from within the sector⁶ and the Principals of all HEIs in Scotland, from which the Executive and its Review Panel⁷ have gained important insights about how Scottish higher education is changing. The diversity of what institutions do, and how they do it, is striking.

In part this diversity reflects deliberate choice, with institutions seeking to play to their strengths. There are clear signs of growing alliances in broad strategic roles between institutions, and all have some co-operation around particular fields of research, teaching and administration. But there are also areas of potential co-operation and change where progress seems slow and it is hard to get a systematic view of the true scale and depth of co-operation.

Other diversities reflect perhaps less constructive reasons. In some instances it is clear that HEIs have strategic choices to make about which they are uncertain, for instance how best to pursue the flexible learning agenda and not least how to develop effective e-learning strategies. In both these cases, many institutions are seeking clearer steers from the Executive before committing to change.

In other instances diversity prevails because some institutions are now thinking 10 to 15 years ahead and are laying the groundwork for transformational change, while others are perhaps more focused on adapting to the outcome of the last RAE and preparing for future research assessments.

⁶ Universities Scotland, AUT, EIS and NUS

⁷ Membership at Annex B

Despite a diversity of bottom-up change there is, therefore, still a need to identify common issues that have to be addressed across the system as a whole and how these might be progressed. In the following sections, the Executive is initiating a dialogue for change and suggesting directions. This paper is not issuing any directives.

Higher education institutions are bodies which rightly have a high degree of autonomy, and are established under a variety of legislative arrangements. They are not state or public organisations in any conventional sense. However, governments recognise that there are market failures in research and education, and inequalities of access to higher education. These prompt policy action to promote wider social and cultural well-being as well as economic progress. On average in Scotland, HEIs receive about 56% of their income from government. In consequence it is important that there is appropriate transparency and accountability for the use of the significant public funding received – over £700 million per annum – even while leaving the space for individual institutions to develop and exploit their strengths, determine their strategic direction and safeguard their academic integrity. Where government funds, it has to do so without favour and without frustrating necessary freedoms.

Through SHEFC, the Executive has to fund in ways that encourage institutions towards producing tangible benefits for Scotland across the sector as a whole, without stifling the character and creativity of its individual parts. Funding has to be demonstrably associated with effective, strategic management of organisations.

Whilst maintaining established strengths and interests, we must have clear ambition for Scottish higher education. In the globalising world economy where effective local response matters so much, higher education will fashion the science and skills which will allow Scotland to be internationally competitive. This can only be done by maintaining a clear focus on promoting excellence and relevance in teaching and research.

2

From Here to There: Directions for Change

The expectations and contributions of higher education are changing. This section sets out the key features and achievements of Scottish higher education at present, suggests what the drivers for change will be and where they are likely to take us a decade from now. Considered below are the three main activities that the institutions undertake – teaching and learning, research and knowledge and governance and management.

Teaching and Learning

Teaching and learning is at the heart of what higher education institutions do and a cornerstone of the sector's role. Higher education plays a crucial role in developing the market for lifelong learning, responding to demand for opportunities for personal development and the skills needs of the labour market. It enables Scotland to maximise the return on the significant investment being made in our schools, and other learning environments. Higher education has traditionally contributed to social justice and mobility in Scotland, as well as to the repute of Scotland in the wider world.

Teaching Today

Higher education in Scotland is emerging from a decade of rapid expansion, driven by rapid rises in participation rates for Scottish and UK undergraduate students. As the last millennium drew to a close, there were nearly 260,000⁸ students in higher education courses in Scotland. This was double the number of a decade earlier. 72,000 (28%) of these attended higher education courses in further education colleges (almost all on sub-degree level courses, such as HNC and HND), 38% were part-time and 80% were Scottish-domiciled students. Expansion was the theme of the last decade but this has less salience, given these past achievements, for change in the decade ahead.

Looking at higher education institutions specifically, in 2000-01 the balance of students in Scottish HEIs was 71.2% from Scotland, 14.1% from the rest of the UK, 4.6% from the EU and 10.1% from non-EU overseas students. Our higher education institutions compete in local, national and international markets. Over the five years to 2000-01, there has been a steady increase in the number of Scottish-domiciled students, a slight reduction in the numbers coming from the rest of the UK and a significant rise in the number of EU and non-EU international students enrolled in Scottish HEIs. It is estimated that in 1999-00 international students paid some £70 million in fees and spent over £120 million off-campus⁹. It is also estimated that one full-time equivalent job is created for every 4-5 international students studying in Scotland⁹. Of course, young Scots also travel outside Scotland for higher education. But the competitiveness of our system is such that we are net importers of students, with the balance approximating 18,000 in 2000.

⁸ Figures for 1999-00; figures for 2000-01 will be available this summer.

⁹ *'Economic Aspects of Scottish Higher Education Institutes'*, COSHEP 1999.

Scotland performs well on a range of indicators for access, participation and retention of students in general, but also for less advantaged groups. Over half of our school leavers go into further and higher education, 48% of our young people participate in higher education¹⁰, well over 50% have benefited from higher education by the age of 30. Across the sector the proportion of students coming from low participation neighbourhoods is higher in Scotland than for other parts of the UK¹¹. While retention can always be improved, our rates compare favourably with the rest of the world. In addition, the vast majority of those graduating from Scottish institutions who go into permanent employment, do so with firms in Scotland - some 74%. Nevertheless, while clearly valued in the market, some employers will cite concerns about how far graduates have the transferable skills they will need over their working lives.

And despite the growth in numbers extension of access remains an issue. The proportion of students from lower socio-economic groups in HEIs has remained fairly static. The number of formal articulation agreements between higher education institutions and further education colleges remains relatively small.

Last of all, while there has been a huge expansion in student numbers, full-time, full-length degree courses remain the form of provision around which HEIs are overwhelmingly organised for teaching and learning. Opportunities are more limited for other forms of participation more attractive to some students, particularly those entering or returning to higher education later in life, including those seeking continuous professional development. Related to this, we are still at the early stages of exploring the potential of new technology to open up access, enable more flexible provision and develop new ways of engaging with students. And, while there are striking examples of institutions working together to expand the range of learning available to their students, collaboration in teaching remains an area where there is potential to do more.

Learning for Tomorrow

Making opportunities available on a wider range of models, to a more diverse group of students, is a challenge for the next decade which requires action now. The decade ahead is not likely to be a linear extrapolation of the last.

Some of the drivers of change are already apparent. Over the next 30 years, the UK's population will age markedly and, with low birth rates, the number of younger people within the population is predicted to fall. Importantly, demographic changes will be more marked in Scotland. According to the 1998 population projections from the General Registrars Office for Scotland, by 2031, the Scottish population will fall below 5 million, and the population will be older. In 2019, the proportion of children under 16 is expected to be 17.2%, falling from 19.7% in 1999.

¹⁰ Based on the Age Participation Index of the numbers of 17-21 year olds in full-time higher education as a proportion of the population of 17 year olds.

¹¹ Performance Indicators in higher education in the UK, produced by the UK Funding Councils.

At the same time, the proportion of people of pensionable age will increase from 18% to 22.5%. Clearly this will have implications for a host of areas such as healthcare, housing, economic development as well as education and training. It is important that the higher education sector is able to recognise and respond to the needs of a changing student population and the labour market at large.

The same pattern of demographic development, allied to economic change, will create some new demands. Major patterns of social and economic change have now left individuals with less certainty about the ways in which their personal and working lives will evolve. In the workplace, there are few 'jobs for life', as well as stronger imperatives to develop new skills as markets and technologies change. With economic pressures to extend rather than reduce the length of time in the labour force, it can be expected that demand for continuous professional development (CPD) will increase. HEIs are likely to be confronted with new types of students seeking new skills, requiring new pedagogies and with new demands for how and when and where courses are presented.

These developments will raise wider questions about the range of existing provision, how students are helped to make the choice of course that is right for them and how institutions can form constructive and effective relationships with employers and professional bodies, especially in subject areas intended to have a particular vocational focus. There are already many examples of close working relationships between those developing and designing courses and professional and employer bodies. It will be important to learn from the successes in this area. Equally critical will be joint working between institutions, the Funding Council and organisations such as Future Skills Scotland, to predict and help address skills gaps and to provide better information on graduate outputs and on opportunities in the labour market.

If the key drivers for change are new student markets and new technologies, rather than expanding traditional domestic demand, both will be more subject to external competition and more uncertain. The challenges to the system will come from around the globe as much as from within Scotland. We cannot assume that teaching markets protected by language, geography and tradition will remain immune from new external competition. As the shape of the domestic market changes, Scotland will have to compete more effectively overseas. In teaching, as in research, leading edge advantage can shift quickly if momentum is not maintained. It will be important that people can find their way into and around the education system at all levels.

For domestic students, with Scotland already exceeding the UK Government's participation target, there is a need to consider what other targets for widening access should be set. While the level of participation in higher education in Scotland is to be welcomed, the Executive believes the proportion of those

from lower socio-economic groups in HEIs needs to grow. While Scotland has world-leading completion and retention rates, we should not be complacent about the scope for doing even better¹².

The Executive believes its key role should be to assess how the system as a whole performs, rather than impose particular approaches on individual institutions. While all institutions are expected to be committed to promoting fairness of access and opportunity, effective performance in further widening access is expected to involve some specialisation of approach, and further co-ordination between institutions. In particular, with the proportion of those from lower socio-economic groups tending to be significantly higher in the further education sector than in the higher education sector, colleges and HEIs will need to be closely linked in offering their distinctive, but complementary, routes into and types of higher education. Education needs to be responsive to the more diverse needs of learners and build appropriate routeways and opportunities between schools, colleges and HEIs.

Across the student body as a whole, there are already signs that learners are becoming more demanding about the nature of courses. As well as seeking new ways to study, students may well want more choice in the length of time they have to study, new types of degrees and different forms of vocational orientation. Institutions will need to develop strategies to respond to changes in demand. This response should not be simply about competition between institutions. Institutions should be encouraged to think creatively about how they can work together to expand the opportunities available to students. Scotland has a strong tradition of providing students with access to a broad range of subjects within institutions: a challenge for the future will be combining forces across institutions to open up new and relevant study choices.

New patterns of domestic demands for learning, such as growing CPD and part-time study, are likely to reinforce existing institutional efforts to use new technology creatively. The Executive has little doubt that institutions are moving in this direction and in different ways. But there is no coherent bottom-up strategy for e-learning emerging across the Scottish HE institutions and few signs of overall e-learning strategies within institutions. There are important choices to be made quickly about how the higher education sector in Scotland can best develop its expertise and capacity in the use of new technology in learning. The Executive is committed to working closely with SHEFC, the sector and other agencies to explore the options.

E-learning is one, but only one, dimension of the need to capture a larger share of international markets. Not just of the ‘big’ subjects, but for smaller subjects which may have niche markets here and abroad. Tapping into the growing

¹² The Executive’s Social Justice Annual Report: ‘Social Justice: a Scotland where everyone matters’ reports on the progress on meeting a commitment to increase the proportion of students from under-represented, disadvantaged groups, and areas, in higher education compared with the overall student population (Milestone 16). The Executive’s Annual Expenditure Report also already contains targets for access from social groups IIIIM, IV and V and; and on retention.

international market for learners may mean more ‘in-country’ teaching by Scottish HEIs, as well as continuing to attract non-Scottish students to Scotland. This raises important questions about how Scottish higher, and further, education are marketed overseas, and how potential students access Scottish opportunities. It also raises a question about how HEIs might collaborate more effectively with each other in accessing and winning in overseas markets and highlights the scope to use, for example, alumni networks more effectively for the wider benefit of Scottish higher education, or as potential overseas students’ mentors and advisers.

And all these changes will need to be managed in ways which can provide students and the wider community, within and beyond Scotland, with reassurances about the quality of provision. For the sake of external credibility and internal morale, protecting and enhancing quality in teaching and learning will have to be a central preoccupation in the years ahead, and there will be a need to keep a close watch on international developments in this area.

Meeting the challenge of providing a wider range of learning opportunities means building on current strengths and successes, recognising where the margin of change has to be for the decade ahead, and ensuring that all learners feel equally valued by their institution. More than ever before, with more diversity and uncertainty in demand, HEIs will require coherent teaching and learning strategies and they are likely to contain strong collaborative elements. Some detailed suggestions for change are contained in the next section.

Do you agree that the key challenges in teaching and learning for higher education institutions over the next decade will be developing new student markets, and making the higher education they provide available on more flexible terms? Where will the greatest opportunities, and the largest obstacles, in meeting these challenges lie?

Do you agree that increasing the proportion of students from the lower socio-economic groups is now the key challenge in widening access in Scotland? What are the most important actions the Executive could take to meet that goal?

Do you agree that Scotland should seek to develop stronger links between labour market needs and higher education provision? What are the key issues to consider in seeking to develop those links?

Do you agree the importance of increasing the numbers of overseas students, either as distance learners or coming to study here and the need for Scottish wide co-operation to do this? What more can be done in linking to Globalscot or alumni networks, for example, to help achieve this?

Research and Knowledge

Today's Research

Scotland's higher education sector is a successful producer of research, measured on a range of traditional indicators. Relative to its size, Scotland has a strong, diverse research base producing 1% of the world's published research with less than 0.1% of the world's population. Benchmarked against its 9% share of the UK population, Scotland's higher education institutions secure, in intense competition with other UK higher education institutions, some 11% of UK Research Council funding; 14% of UK Government Departments' research funding; 14% of EU research budgets for the UK; and 35% of UK universities' royalty income for Intellectual Property. This implies considerable excellence and relevance in the production and publication of research.

But this does not compensate, in terms of income and employment, for the low rate of corporate research and development within the Scottish economy. Scotland must have a vibrant and robust system for making the most of innovation if it is to play a significant role in the global economy. The relationship between research and the economy needs to change from one where science discoveries are exploited abroad, to one where research is commercialised more effectively at home.

The results of the 2001 Research Assessment Exercise demonstrated that Scottish institutions have responded effectively to the challenges and incentives it set. That progress, towards more work of national and international esteem, must continue. But it is the right time for the UK Funding Councils to review the RAE as a scrutiny mechanism, and its present form and emphasis. There are questions to be asked about whether the RAE has encouraged institutions to plan too much around its five year cycles. Institutions need to think further ahead, planning change and investment to equip them for the longer term.

The RAE has encouraged departments and institutions to think strategically about their research visions, objectives and resources, and emphasises merit assessed by peer reviewed published work. However, it is less clear that we have a system which values research for its societal or economic relevance, or that stimulates researchers to communicate with the wider community, rather than peers through publications. Publications are of course important for the good academic, but a good academic system also supports and encourages relevance and transmission of knowledge to different potential users beyond the classroom and beyond the academic community.

So although maintaining excellence in the production of ideas is essential, the challenge for our future is to encourage more effective transmission of relevant ideas to likely users. The Executive has already put in place funding pipelines to support the commercialisation of our research base – valuing, aligning and resourcing the relationship between higher education and enterprise through RSE/SEn Fellowships, Proof of Concept, SMART, SPUR and new VC funding. The diversity of current commercialisation activity – not just science and technology – is a key strength to build on.

Tomorrow's Knowledge Transfer

Intense global and national competition for research funds will continue in the decade ahead and if we are to be a world-class research base rather than a locus for a few isolated areas of excellence then Scotland has to maintain its present research successes and develop more.

The challenges for extending research excellence in Scottish higher education are three-fold. The first is to address key strategic gaps in research capacity particularly, but not simply, in areas that are of significance for science and the economy. These gaps in key areas have to be understood and addressed.

The second challenge, recognising that not all departments can or should become centres of research excellence, is to be more active in ensuring that excellent researchers in less high-rated departments are encouraged and facilitated to work in collaboration across institutional boundaries. New technologies and networking possibilities need to be more widely used to maximise the contribution that effective researchers can make.

The third challenge is to have more active collaboration strategies across the sector. Individual institutions, SHEFC and the Executive need to have a systematic understanding of the scale and depth of collaboration. Collaboration needs to be approached strategically by institutions, and to be pursued positively – and not as a response to *ad hoc* crises. It needs to take in not only closely linked areas, but to enable new areas of interdisciplinary and inter-institutional research to be pursued. How far current funding regimes can be adapted to provide better support to and incentives for collaboration is a key issue for SHEFC and the Executive to consider in partnership with the sector. The Executive would like to explore the scope to develop new structures in Scotland which would encourage researchers from different institutions and disciplines to work together in pushing out the boundaries of knowledge.

The excellent results of the 2001 Research Assessment Exercise are a watershed. Scotland needs to continue to celebrate and build on the excellence achieved, as well as considering the strategic areas where research needs to be grown. But it is time also to recognise that the other key challenge for the decade is the need to continue to encourage and support innovation and creative thinking about knowledge transfer.

The Executive is, of course, concerned with the transmission of good science into strong business. The Executive wishes to encourage the exploitation of research not only in cutting edge areas of science and technology, but in equally valuable activity which helps create an intelligent, cultured and creative society. In recent years there have been outstanding examples of commercialisation of activity in fields as diverse as art and archaeology. Valuable research also needs to find more effective ways into public policy, communities, the Parliament and the Executive.

Using the wider definition of science¹³, the establishment of the Scottish Science Advisory Committee (SSAC) is the start of a new process which will bring a greater focus on science activity in Scotland, and a new and consistent commitment to science by the Executive. The SSAC will advise on the priorities for scientific activity appropriate to Scotland and this will guide the Executive in its decision making on resource allocation.

A decade from now the Executive would expect to see significantly more science and non-science firms which have ‘spun-out’ and started up from HE institutions. There is already plenty of evidence and enthusiasm among students and staff, as the rise in spin-out¹⁴ and start-up businesses in recent years demonstrates. The ambition must be easier and more frequent access to research and researchers for business and other users. Departments which are not themselves at the leading edge of research have a key role to play in disseminating research outcomes to the wider community, including (but not only) to Scotland’s large number of small and medium-sized enterprises (SMEs).

Achieving this change will not be easy. It will involve not just changing structures and incentives, but also gaining the support of the research community. Many staff of HE institutions already work long hours and chose careers to pursue interesting questions knowingly foregoing high salaries. Those who generate ideas are not always those who are best placed to create and sustain businesses.

There is also a need to address broader company building skills to ensure embryonic businesses growing out of higher education are able to develop their proposals and reach their full growth potential. This will involve key areas like management team development and marketing, as well as broader areas essential if companies are to be ‘investment ready’ and able to attract the funding required for development.

The Executive is proposing to establish a £20 million Fund of Funds to support small scale early stage investments by the private sector which will help in filling an existing equity gap in the current market. But equally important will be the Scottish Enterprise’s move to addressing any of these demand side constraints through a new network-wide investment readiness programme – to provide the type of support required in the right place at the right time.

Scotland needs a new organisational ‘architecture’ to encourage innovation and dissemination between Scottish academics and commercial and other users of their work. This may involve institution-based ‘talent spotters’. It may mean more applied institutes with their own transmission mechanisms. It will almost certainly mean finding more ways to help academics to find time to become involved in commercialisation and other forms of knowledge transfer, and to deal with the impact of their involvement in these other activities on their teaching and research capacity. It will mean thinking about how innovation and dissemination, like teaching and research, can be recognised in terms of status and reward.

¹³ A *Science Strategy for Scotland*, Scottish Executive, 2001 took a broad definition of science to encompass the physical, life and social sciences and also engineering and technology.

¹⁴ 107 spin-out companies formed, *Survey of Intellectual Property Commercialisation in the Scottish Higher Education Sector*, Scottish Executive, September 2001.

Ownership of Intellectual Property (IP) is emerging as a key issue. Opportunities for spin-out need to be acted on quickly when they are identified. There is evidence of concern that uncertainty about how best to deal with IP is slowing down agreements between institutions, funders and individual academics. We need to find ways to reduce these delays – the Executive will take a lead, if necessary.

Specific possibilities for change are suggested in the next section.

Do you agree with the aim that in a decade from now: obvious areas of strategic weakness should have been addressed; there should be better networked groups of academics in linked research distributed across Scottish institutions, and beyond; institutions should be collaborating more strategically to maximise the effectiveness of investment in research? What are the opportunities and obstacles to pursuing this aim?

Do you agree that the other key research challenge for the decade is the need to continue to encourage and support innovation and creative thinking about knowledge transfer? Again, what are the opportunities and obstacles?

Looking specifically at the commercialisation of research, where is action most urgently needed, if we are to maximise the impact of higher education?

Governance and Management

Today's Governance and Management

The overall governance system for Scottish higher education institutions, within which there is considerable diversity of approach, reflects the long evolution of Scotland's HEIs as well as the recent growth in the sector. At the top level, at the interface between government and institutions, it has been configured to protect the legitimate concerns of institutional autonomy, and academic freedom, whilst ensuring a degree of accountability in the use of public funds.

Reflecting governance arrangements established over many years, Ministers have more or less no powers over the internal management of individual institutions. All the same, as a major funder of higher education activity the Scottish Executive has an interest, not only in the overall outcomes and performance management, but also with regard to the use of resources in the short and longer term.

Governing bodies play a critical role in ensuring that higher education institutions are accountable to the wider community. The continuing capacity of institutions to attract high quality and committed governing body members will be central to the future health of the system. The Executive recognises that for the system to work well, members of governing bodies must be able to feel that their contribution to the sector is a real one. While the composition of governing bodies does seem largely to reflect stakeholder interest and the

strategic professional competencies needed to govern large, complex organisations, institutions need to avoid complacency, and work hard to ensure that their governing bodies have the right mix of skills and talents. The degree of representation of student interests on governing bodies and other fora varies markedly across institutions. The Executive expects to see strong and effective structures of student representation, given the different kinds of student demands likely to emerge in the future and rising to the challenge of the global market place. It is also apparent that the amount of formal training given to governing body members is variable.

While today's governance provides effective fiduciary accountability, it is less clear that it works well as a way of engaging stakeholders in thinking ahead. Arguably, the arrangements are better at accounting for the past than looking to the future. But institutions will need to be able to rise to the challenges and opportunities of the global marketplace and governing bodies can play an important role in challenging their executives to plan for this and examine strategies proposed.

While the Executive believes that Scottish institutions are well led, there are four broad aspects of management where it believes institutions might learn particularly from good practice in other parts of the public and not-for-profit sectors.

At the level of *strategic management*, many institutions are still planning for their future development over relatively short-time periods, and not all strategic plans have enough regard to the real possibilities for co-operation and collaboration, either regionally, within Scotland or overseas.

As centres for the development of human capital there is a costly irony that there is no deeply embedded culture of *training staff for their changing roles*. The assumption too often seems to have been that academic staff have no need to learn new techniques and technologies as their jobs change. In recent years there has been more training for top-level academic managers and this is to be welcomed. But this approach is only slowly permeating down to faculties and, at the departmental level where innovation and change in HEIs really takes place, there appears to be relatively low levels of systematic training and little requirement for formal management competencies for those who run departments. Young academics can be given enormous responsibilities without any significant prior training.

Related to this there is a wide variety in approaches to *managing academic careers*, especially of contract research staff, and indeed even much variety across the departments in a single institution. Whilst early years as a researcher are a period of establishing and signalling competence to be offered a more permanent place in academia, it is also the case that many young scholars do not perform to their potential when existing in a context of uncertainty and fear for the future. Too many staff spend too long on insecure terms and EU legislation will make this approach to the use of contract staff

untenable. Although there has been progress in disseminating good practice, more still needs to be done in this difficult area.

Well-trained staff are essential to successful performance in relation to teaching and research and in attracting students and funds. But *adequate and quality estate*, space to work, learn and live, is also important. Some Scottish institutions have both attractive and well maintained estate, others do not. In Scotland funds for capital investment have been integrated into general annual grants for some time. It now seems clear that capital investment has too often lost out to meeting short-term revenue pressures, and that some institutions have not managed to maintain adequate capital investment plans. This is an issue for which institutions, the Funding Council and the Executive all have a responsibility.

Over the last 20 years, in market and non-market organisations, there has been massive restructuring of how organisations secure the inputs necessary for their business. To a large extent this has involved organisations being more willing to pool expertise and activity on services. There are encouraging signs that institutions are now much more actively considering how they can collaborate more effectively than in the past to perform particular functions more effectively, particularly in the light of new demands for expertise in areas such as disabled access and health and safety. But not all institutions are equally active in exploring the potentials. It is important for the wider image of the sector and securing the best value for investment that this changes.

Tomorrow's Leadership

The Executive believes that ten years from now the main concern of government with the higher education sector will be effective management and finding better ways to ensure that the sector as a whole is able to deliver on public priorities, without compromising the capacity of institutions to innovate and challenge. Good governance will be important, because it will allow organisations to look forward, working with stakeholders. This raises the question of how the relationship between the Executive, the Funding Council and institutions is structured.

The Executive believes that SHEFC, while still acting as the buffer between institutions and Ministers, could nevertheless evolve its capacities to play a more sophisticated role in mediating between the sector and the Executive. That might mean SHEFC developing its relationship with individual institutions, having a closer understanding of how each institution wants to develop and engaging in more dialogue with them about their specific aims and objectives. Discussion with many of those in the sector suggests there would be support for moving to some type of more tailored funding from SHEFC to institutions, which would recognise and value more clearly the diversity within the sector. But there is no clear view on how that might operate in practice, in a way which would be accepted as sufficiently fair and transparent. The Executive would like to explore further how these ideas might be taken forward.

The Executive believes that to meet the challenges of new student demands and global research competition that the capacities for collaboration across institutions should be encouraged and enhanced. Collaboration is sometimes used at the moment to address issues of sub-scale provision. But it needs to become seen as a means of enhancing the capacity for flexibility and an advantage for excellence. Equally making the most effective use of the resources available for providing vital underpinning services has to be priority. So alongside an evolving role for SHEFC, the Executive would expect governing bodies to be even more strategic, taking a forward look and ensuring that there is planning for the longer term. And it will be important that they challenge senior management, help identify opportunities for strategic collaboration across institutions and support such strategies when they are in the wider interest.

A core aim of change must be to empower institutions, their leaders and staff – to encourage our ambitious organisations to do ambitious things. The previous sections set out why the Executive believes Scottish higher education has to have a changing emphasis and the ways in which the Executive would like to see the system evolve over the next decade. The next section sets out some of the principles and means which the Executive believes might be involved in developing a strategy for change.

Do you agree that SHEFC should develop a stronger dialogue with the sector and work more closely with individual institutions? What impact might that have on the way funding is determined for individual institutions by the Council?

Do you agree that higher education institutions need to develop their capacity for long-term planning? What are the opportunities and obstacles?

Do you agree that this long-term planning must involve more active collaboration between institutions? What are the obstacles to that at present?

The analysis above sets out particular issues relating to staff development and management of estates. Do you agree that these should be the key areas of concern for this review?

3

Principles and Actions for Change

Principles

This review is essentially concerned with strengthening the Scottish higher education sector and preparing for the long term. The Executive has set out its understanding of why the system needs to evolve and the broad directions of change over the next decade. This paper invites comment on that analysis. This section sets out some broad principles and illustrates some of the policy and practice developments that might support these. The emphasis is to build on existing strengths by developing capacities for change, for individuals, institutions and the higher education system as a whole, and then ensuring that our higher education efforts contribute even more science and skills for Scotland a decade from now.

The Executive's analysis, to date, has been guided by some key principles for the sector:

- Maintaining the autonomy of institutions whilst they ensure both appropriate accountability for their past actions and strategic alignment for their future plans.
- Developing a strategic view, which is both forward and outward looking, within the Executive and SHEFC which is reflected in the strategies of institutions, and their departments.
- Allowing that strategic view to support both diversity of missions and institutions, and unity of purpose for the system as a whole.
- Recognising that maintaining institutional diversity strengthens the case for local and Scotland-wide collaboration and co-operation among institutions.
- Raising responsiveness to stakeholders and more effectively opening up HEIs to more potential users of both established knowledge and new ideas.
- Regarding excellence and relevance, not only in teaching and research but also administration, dissemination and commercialisation, as measures of esteem.
- Ensuring effective management at all levels.
- Placing an emphasis on the human capital of HEIs, by attracting, developing, and retaining outstanding staff.
- Ensuring that staff are equipped for the changes and transitions in their careers and recognising that successful change will require the support of those who work in higher education.

These are the approaches and capacities which the Executive believes will make the system more responsive, flexible and effective in the face of change.

Specific Actions

Consultation documents often take the form of identifying broad areas for change and then posing questions about more detailed possibilities. The Executive is keen that there should be a wide range of responses to this paper, both in relation to directions for change but also specific measures that the Executive or its agencies might take. The proposals below are offered for comment and reaction – they do not represent decisions already taken.

Teaching and Learning

Measures to develop teaching in the next decade have to both further progress some existing issues, such as wider access, and adapt to the major shift in demand patterns and potential pedagogies discussed earlier. To meet these changes:

- HEIs will have to develop more sophisticated approaches to estimating the demands for learning and more explicit strategies to meet their teaching goals; SHEFC will have to develop mechanisms to ensure that these plans ‘add-up’ for Scotland.
- SHEFC, as friendly partner rather than external threat, could be encouraged to support more collaborative alliances in teaching provision between HEIs and facilitate structural change measures where institutions seek them to expand, rationalise or develop provision to meet the changing needs of learners.
- Stronger teaching strategies will have to have greater regard for part-time and CPD students and there will have to be consideration of how such measures are best financed and most effectively delivered.
- New student markets, and indeed other user requirements to interact with institutions, require much improved Web access to Scottish HEIs; to meet distance learning needs there is a need for a more coherent approach to establishing e-learning.
- E-learning pedagogies will become more important for on-campus and for other domestic students, but will also play a major role in attracting overseas student interest; overseas ‘in-country’ education by Scottish HEIs may well grow and the promotion and funding strategies for such initiatives will need careful consideration.

- The Executive needs to consider the coherence of individual, Scottish and UK strategies for the promotion of Scottish higher education overseas and consider how existing alumni networks can be more productively used as ‘overseas ambassadors’ for Scottish higher education.
- The Executive and SHEFC will have to articulate clearly policies and targets in relation to access and participation; clarity is required not just in overall targets but, given acceptance of diversity of HEI emphasis, the particular contribution which should be expected of individual institutions.
- New demands may require more varied course and degree structures and pedagogies; whilst the demand is likely to continue for the current broad duration of undergraduate degrees, institutions should be encouraged and helped to respond to demand for other forms of course for those seeking more accelerated learning.
- The Enterprise and Lifelong Learning Committee has proposed a review of the way teaching funding is distributed, undertaken independently of SHEFC. Alternatively SHEFC could continue to develop its work on funding mechanisms for teaching, but in closer partnership with the sector than in the past.

Research and Knowledge

The challenge for the future is to give appropriate weight to the relevance and utilisation of research, while still recognising the intrinsic value of excellent research. Changes could include the following measures:

- The Science Strategy and Scottish Science Advisory Committee should play an increasingly important role in determining how the science base is developed in higher education.
- As in relation to teaching, SHEFC should encourage, facilitate and fund collaboration across the institutions and, again where invited to do so, facilitate measures for restructuring sought by HEIs.
- In recognition that there are excellent researchers in lower-rated departments, as well as the recognition that some groups of able researchers operate at a sub-optimal scale within their own institutions, SHEFC should help to promote research networks within Scotland and, wherever possible link them to prestigious partners elsewhere.
- Ways of recognising research relevance in funding streams should be developed. A major route to addressing the strategic gaps in the interface between research and the Scottish economy and society may be to promote new major centres of applied research with a

user funding base. Scottish Enterprise has been cleared to proceed with the detailed planning phase for technology research institutes, initially focusing on the energy sector, as outlined in the joint SHEFC/Scottish Enterprise Knowledge Transfer report. Similar principles could apply in other areas, with other partners.

- It will be essential to go beyond simply conducting relevant research to more effective dissemination of findings to the relevant communities in business and the wider community, both in Scotland and elsewhere; SHEFC and the institutions should give more attention to how to identify what they consider good practice in this regard and how they facilitate it.
- Some research will not merely be relevant but have commercial value, and major applied research centres are likely to have some continuing activity of this kind; it is vital to further promote the commercialisation of research and this may require institutions to convey to their staff why this is important, and whether and how it has relevance to staff with different interests.
- It will be essential to move beyond an understanding of why knowledge transfer is a core activity of institutions and to recognise such efforts in reward systems, both for institutions and individuals. Commitment should continue to RSE Enterprise Fellowships and Proof of Concept. The Scottish Institute for Enterprise should play an increasingly prominent role.
- There may be a need for guidance or a range of ‘model agreements’ on IP which would allow all parties to move more quickly.

Governance and Management

Some of the requirements for governance and management change are touched upon or implicit in the previous sections, but there are key possibilities for other change:

- The Executive has to clarify the role of SHEFC and, without compromising the autonomy of the sector, enhance its capacities to facilitate change across institutions.
- Defining SHEFC’s role in stimulating debate about the pattern of provision and supporting opportunities for collaborative alliances across institutions and other measures that aid rationalisation.
- Institutions could work with SHEFC to produce a comprehensive report of the extent and depth of strategic collaboration across the sector.
- Funding allocations to institutions might have firmer indications for future years, example within the period of the three year Spending Review cycle.

- The effectiveness of management in higher education and the development of better strategy for the sector might be facilitated by establishing a Scottish centre for excellence and innovation in higher education management. Or finding some other mechanism to enable senior managers in higher education in Scotland to find development opportunities and share good practice.
- SHEFC might offer more support for extensive staff training and training to governing bodies in the higher education sector.
- Institutions should review whether the arrangements for representing key stakeholder groups on their governing bodies, not least students, are appropriate and effective.
- Institutions should have a modern approach to how they provide services, consulting with service users and developing plans for strategic collaboration where appropriate – and SHEFC should assist this.
- SHEFC would expect institutions to have a clear commitment to fairness and equal opportunities for staff and to developing their capacities, so that they cope effectively not only with continuing developments in methods and technologies but also with the sharp transitions in their careers that are often associated with promotions; more certain entry pathways have to be established for new researchers.
- The Executive, SHEFC and institutions would work together to improve the incentives in the way funding is provided to encourage long-term investment in infrastructure.

The Executive would welcome the views of communities, business, students and teachers as well as institutions on whether or how these proposals should be developed further.

Annex A: Definition of higher education

Further and Higher Education (Scotland) Act 1992 (as amended by the Education (Scotland) Act 1996)

The Meaning of Higher Education

38.

- (1) In this Part of this Act “higher education” is education provided by means of any of the courses falling, for the time being, within this section.
- (2) A course falls within this section if it is—
 - (a) a course at a higher level in preparation for a higher diploma or certificate;
 - (b) a first degree course;
 - (c) a course for the education and training of teachers;
 - (d) a course of post-graduate studies (including a higher degree course);
 - (e) a course at a higher level in preparation for a qualification from a professional body;
 - (f) a course at a higher level not falling within any of paragraphs (a) to (e) above.
- (3) For the purposes of paragraphs (a), (e) and (f) of subsection (2) above a course shall be regarded as providing education at higher level if its standard is higher than the standard of courses in preparation for examinations for—
 - (a) the Scottish Certificate of Education at higher grade;
 - (b) the Certificate of Sixth Year Studies;
 - (c) the General Certificate of Education of England and Wales or Northern Ireland at advanced level; or
 - (d) the Scottish Qualifications Authority national certificate.
- (4) For the purposes of paragraph (d) of subsection (2) above, post-graduate studies includes a course following the award of a higher diploma or certificate.
- (5) The Secretary of State may by order, from time to time, following consultation with the Council, amend (a) subsection (2) above by adding or removing any entry relating to a course or by varying any such entry; and (b) sub-section (3) above.

Annex B: Review panel membership

SCOTTISH HIGHER EDUCATION REVIEW PANEL

To help inform the Minister and the Review process, a Review Panel has been convened. The Panel is meeting over the period from March to June to explore some of the key themes to review in discussion with individuals and representative organisations from the sector. Membership of the Panel is as follows:

Scottish Higher Education Review Panel Members

Mr George Borthwick CBE	<i>President of Ethicon Europe</i>
Professor Vicki Bruce	<i>Deputy Principal Research, and Professor of Psychology, University of Stirling</i>
Mr Charlie Woods	<i>Senior Director of Knowledge Management, Scottish Enterprise</i>
Prof. Duncan MacLennan	<i>Expert advisor to the review</i>
Mr Roger McClure	<i>Chief Executive, SHEFC</i>
Mr Ian Ritchie	<i>Coppertop, Scottish Institute for Enterprise</i>
Professor Peter Scott	<i>Vice-Chancellor, Kingston University</i>
Dr John Taylor OBE	<i>Director General of Research Councils, Office of Science and Technology</i>
Professor Mike Thorne	<i>Vice-Chancellor, University of East London</i>
Ed Weeple	<i>Head of Lifelong Learning Group, Scottish Executive</i>
Lucy Hunter	<i>Head of Higher Education and Science Division, Scottish Executive</i>