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**University
of Durham**

School of Education

Degree of Doctor of Education
Thesis

**“A Study of UK Education Policy in the
Adoption and Implementation of Third Stream
Activities by Higher Education Institutions”**

Stephen Clough

2009

“A Study of UK Education Policy in the Adoption and Implementation of Third Stream Activities by Higher Education Institutions”

Abstract

The United Kingdom Governments’ *third stream* education policy is becoming increasingly important for the higher education sector and, in some universities, has become the *second stream*, after teaching and learning; replacing research. *Third stream*, originally described as income generation, has more completely been defined by commentators as the generation and exploitation of knowledge, technology and other university capabilities. The amount of *third stream* Government funding continues to increase year on year. This study has focused upon the adoption and implementation of *third stream* activities at a traditional university, a new university, and at a college with a significant amount of higher education provision.

This study has identified the complexity of policy-making and the imprecise nature of the process. There is a strong case that policy does not emerge as intended. Policy-making is complex, dynamic and often incremental; and is subjected to influences such as the power of globalisation and the experiences and political expediencies of politicians. A qualitative approach to this research, drawing upon ethnographic methods, was selected due to the need to collect raw data in a broad range context. Grounded theory provided a means of data analysis that suited the complexity of the subject and the richness of the data. The number of issues that this study has identified is broad; ranging from the divided views on the benefits of *third stream* policy to the ability and willingness of academics to engage in *third stream* activities. The study has revealed that dissemination of *third stream* policy to academics at the three host institutions is not comprehensive. The issue of incentives for academics to engage in *third stream* is seen as being vital by commentators, interviewees and the Higher Education Funding Council for England (HEFCE).

Declaration of Ownership of Work

I hereby declare that this thesis:

“A Study of UK Education Policy in the Adoption and Implementation of Third Stream Activities by Higher Education Institutions”

is an original piece of work and that where any reference has been made to the work of other authors, it is clearly shown and that their contribution is acknowledged. Every effort has been taken to avoid plagiarism, either intentionally or unintentionally. Copyright has been observed and consent has been obtained, where necessary, for the use of data and information obtained from primary sources. The copyright of this thesis rests with the author. No quotation from it should be published in any format, including electronic and the internet, without the author’s prior written consent. All information derived from this thesis must be acknowledged appropriately.

In keeping with the University of Durham policy regarding research ethics; the names of individual interviewees have been concealed to protect anonymity and, also, fictitious names have replaced those of the three host institutions which have been the subject of this study.

Signed:

[Stephen Clough]

Date: 7th December 2009

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This thesis is dedicated to the memory of my father, Thomas Clough, who instilled in me the value of education and who would have delighted in this accomplishment.

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Chapter 1

Introduction and Background

That they should oppose one another, I have no objection, for in this way truth and justice are best discovered... Squabble as much as you like, I shall not reproach you. The only condition is that, with a pure and upright conscience, you should seek the truth.

(Archpriest Avvakum, 17th Century Russia)

1.0 The focus of this study is the *third stream* element of higher education policy in the United Kingdom. The study will explore the complexity of policy-making and compare the adoption and implementation of the *third stream* at a small number of higher education institutions (HEIs) with the United Kingdom Government's perception of HEI *third stream* performance. The higher education institutions that have been selected for observation are located in the same geographical area in England. They all fall within the boundary covered by both the region's HEFCE (Higher Education Funding Council for England) regional director and the relevant University Association. It should be noted that the emphasis is upon UK Government higher education policy as applied to England; the UK devolved regions of Scotland, Wales and Northern Ireland are not central to this study. There is an obvious need to explore HEFCE support for *third stream* due to the location in England of the host HEIs that have been selected for scrutiny. Also, the number and range of higher education institutions in England provide scope for international benchmarking. Comparison of the achievements resulting from UK policy with the experience of overseas universities in *third stream* activities are explored in chapter 2 of this thesis. The United States of America, generally accepted as a leading country in both the

development and exploitation of university research, will provide a benchmark in this study. This benchmark, it is intended, will ensure a more illuminating comparison than that which would be achieved by a more inward looking intra-United Kingdom focus.

A definition of *third stream* is provided by the Science and Technology Policy Research Unit (SPRU) at the University of Sussex: '*third stream* activities are concerned with the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments' (2002:iii). *Third stream* activities are growing in importance to higher education institutions and it is estimated that 'between approximately £2.9 billion and £4.2 billion out of £10.3 billion generated through knowledge exchange engagements between 2001 and 2007 can be attributed to HEFCE *third stream* funding, either directly or indirectly' (HEFCE, 2009:20). It is thought that this estimate is conservative 'as many of the outputs cannot be monetised' (ibid). The rate of growth in specific *third stream* activities such as collaborate research income or the exploitation of intellectual property (IP), at United Kingdom higher education institutions, are detailed in chapter 3 in this thesis. This increase in the significance, and rise in funding, of *third stream* activities has attracted the author of this thesis to research into this area of government higher education policy. The commercial aspects of *third stream* funded activities are somewhat different to the traditional role of academics, that is, the conventional core activities of conducting basic research and engaging in teaching. This relatively new core HE theme raises a number of questions about HEIs that are worthy of investigation and examples of research themes in this study are *the*

perspectives of academics on third stream policy initiatives, changes in the role of academics, changes in the management style and evidence of a more entrepreneurial culture in higher education institutions. It is clear that the Government (DIUS, 2008a, 2008b) recognises the importance of HEIs to the economic performance of the United Kingdom; the issue for this research is to study how *third stream* policy has been embraced by higher education institutions in a particular region of the UK.

A qualitative approach has been taken and the research has involved an emphasis upon the adoption and implementation of *third stream* activities at three institutions; a traditional university, a new university, and at a college with a significant amount of higher education provision. For the purpose of this study a host higher education institution in England is taken to be state funded directly by HEFCE and providing both undergraduate and postgraduate degree programmes that are validated by the host institution or a United Kingdom university. Whilst the specific phenomena of *third stream* developments in the 21st century is an attraction; the appeal of education policy as a field of study, to the author of this thesis, stems from the debate surrounding the turbulent nature of higher education (HE) in the 1990s and the then emergent *third stream* as a core theme in HE funding. The language used in the literature to describe the higher education sector in the 1990s, and the environment in which it operated, is vivid and includes the use of terms such as ‘revolution’ and ‘transformation’ (Scott, 2000:190). Watson (2007:1), referring to higher education during the era of the Dearing Report (1997), comments that ‘there was a sense of paralysis within the major political parties in terms of what to do about it [HE]’. The desire by government to

break this 'paralysis', and engender a wider discussion as to the future direction of higher education, was influential in the formation of the Dearing Committee and the commissioning of the Committee's high profile report; *Higher Education in the Learning Society* (1997).

Although a good deal of what has been written about the higher education sector in the 1990s relates to the so-called 'mass higher education' phenomena (Bargh *et al*, 2000; Inayatullah and Gidley, 2000; Coffield and Williams, 1997; Martin, 1999; Taylor *et al*, 2002; Robins and Webster, 2002; Field and Leicester, 2000), increasingly, reference is made to 'extending the boundaries' of the traditional base of university work (Shattock, 2003:109). Shattock (2003:110), citing Etzkowitz and Leydesdorff (1998), explains that the traditional research relationship between universities and industrial organisations, usually manifesting in contract research that is identified by the commercial company and conducted by the university, has changed. The relationship between business and higher education, it is suggested, is 'increasingly overlaid by partnerships'. These new arrangements are termed 'third mission' by Etzkowitz and Leydesdorff (1998) and are reported to be in addition to the traditional core university activities of teaching and research.

Universities and business are each conducting practices that are usually associated with the other party with universities becoming more innovative and firms increasingly accepting university researchers into their laboratories. This is only one aspect of third mission, as this thesis will identify. These boundary issues are noted by Etzkowitz and Leydesdorff (1998), quoted in Shattock (2003:111), who observe that 'the boundaries between public and private science and technology, university and industry are in flux'. After conducting a review of the literature, the

researcher of this study concluded that a contribution to knowledge could be made by a study of UK education policy in relation to these new style university-business linkages. The opportunity to explore the impact of this aspect of government education policy, albeit on a relatively small scale, was compelling for the researcher.

The view of the Chairman of the Higher Education Funding Council for England (HEFCE, 2003a), commenting on the ‘profound set of challenges’ facing Universities and Colleges, including an enhanced contribution to economic development, is that ‘many universities and colleges are showing the leadership and enterprise necessary to meet these changes through internal and external changes’ (2003a:2). This study will explore these, and related issues, of higher education *third stream* policy. In order to achieve this, the thesis is constructed in the following way; *chapter 1* is concerned with the complexity of Government policy-making and examines the forces, such as globalisation, that influence policy-making and its outcome. The reason for examining the complexity of policy-making is that this section of the thesis gives the reader a feel for the various influences that impact upon the formation and implementation of government policy; an appreciation of the complexity policy-making enables the reader to better understand why certain policy initiatives may be more successful than others. Globalisation is a dominant force in both economic and educational terms and is included in the first chapter in order to provide an understanding for the reader of its significant place in the context of government policy-making; Ball (2008) states that ‘education policy is increasingly thought about and made within the context of the “pressures” and requirements of

globalisation' (2008:1). The complexity of policy-making and the influence of globalisation are central to the field of study of this thesis and inform the research themes such as changes in both culture and management style at higher education institutions. Chapter 2 provides a more detailed exploration of UK higher education development, particularly in relation to *third stream* policy, and explores several important concepts and developments such as academic capitalism, entrepreneurial universities and the increase in technology transfer. Chapter 2 also considers the experience of the United States of America in *third stream* policy. The review of literature in chapter 2 is essential to this study and informs the reader of how *third stream* funded activities in higher education institutions have progressed during the last two decades and provides a benchmark for the findings from field research in chapter 5. Consideration is given to the UK Government's perceptions of higher education institutions' *third stream* performance in chapter 3 and a detailed study is made of government policy documents; discourse analysis is applied in order to identify the intentions of the Government in this area of higher education policy. The rationale for chapter 3 is to enable the reader to study the HEFCE *third stream* performance indicators and compare how the Government's perception of HEI's *third stream* performance measures up to the views of commentators on policy and *third stream* developments, considered in the first two chapters of this thesis, and also with the findings of the interviews with academics and *third stream* managers from the field research reported in chapter 5. The research methodology is detailed in chapter 4 and this demonstrates the need for a qualitative methodology due to the complexity surrounding policy-making and policy implementation. The reasons for the chosen

methodology relate not only to the complexity of policy; the need to collect raw data in a broad range context is also a significant consideration. Chapter 4 includes an explanation of the approach taken to discourse analysis and grounded theory and, in addition, contains an account of the author's prior experience of third stream policy and activities. In all, chapter 4 sets out for the reader the means by which the research is conducted and addresses key issues, for this complex research topic, such as validity and data analysis. In chapter 5, an analysis of findings from field research at the three host institutions provides an insight as to the extent that academics at the three institutions have embraced the Government's *third stream* agenda. Chapter 5 provides a substantial amount of rich data which is compared with the broad themes that have been generated from the literature in chapters 1 and 2. The final chapter, chapter 6 the conclusion, recalls the purpose for undertaking this study and clarifies the evidence that has emerged from the primary and secondary data that this research has revealed. The final chapter concludes with reference to the interest by a Government Minister in this research and that the author is advising the Minister on his ideas for a new model university.

The section below explores the meaning of what the *third stream* is and details the history of this new higher education funding stream.

The Nature and Origin of the Third Stream

1.1 The emergence of a *third mission* for universities, sometimes referred to as *third leg*, has resulted in the provision of special funding by

the United Kingdom Government to support these business facing activities. This form of university funding is referred to as *third stream*. Initially, these activities were described as ‘income generation activities’ and, more latterly, at times, have been referred to as ‘technology transfer’. The specific HEFCE *third stream* of funding for HEI’s started in 1999 with HEFCE, ‘working with government support from the then Department of for Education and Skills (DfES) and Department of Trade and Industry (DTI)’; *third stream* funding was provided via the HEROBAC (Higher Education Reach Out to Business and the Community) initiative (HEFCE, 2009:22). This new third funding stream was established in order ‘specifically to support HEIs to increase their capability to respond to the needs of business and the wider community, where this would lead to wealth creation’ and was distinct from the two traditional HEFCE funding streams of teaching and research (ibid). HEROBAC funding continued until 2004 and has been succeeded by HEIF (Higher Education Innovation Fund) which was introduced in 2002 as a joint funding initiative between HEFCE and the Office of Science and Technology (replaced by the Office of Science and Innovation). The broad aim of HEFCE and OSI sponsored *third stream* funding ‘has been to enhance the direct and indirect economic benefits of HE’. The achievement of this aim is sought through developing a culture and capacity within higher education institutions to ‘support the transfer and exchange of knowledge of knowledge between HE, business and the wider community’ (ibid). HEROBAC and HEIF have been the ‘primary vehicles’ to deliver *third stream* support (ibid:23). Hatakenaka (2005) states that *third stream* activities ‘have come a long way since their development was first supported by HEFCE through the HEROBAC

program in 1999' (2005:7). Chapter 3 of this thesis looks in some detail at the UK Government's perception of HEI's *third stream* performance.

Neither of the two descriptions above, "income generation activities" and "technology transfer", fully captures the extent of *third stream* funding and the definition provided by the Science and Technology Policy Research Unit (SPRU) at the University of Sussex (2002), quoted at the beginning of this chapter, regarding 'the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments' is a more accurate description of what *third stream* policy is concerned with (2002:iii). The SPRU's view is that the *third stream* 'is about the interactions between universities and the rest of society' (ibid). This definition has been interpreted to include a range of interactions from 'intellectual property (IP) commercialisation, to executive teaching, consultancy, advisory functions, student internships [and the] use of facilities etc' (Padfield, 2003:14).

Although there are alternative definitions of *third stream* that are available, it should be noted that whilst the term *third stream* is used in United Kingdom higher education policy, in other countries different terms are often used to describe the same aspect of HE policy. In Australia, for example, the IRUA (Innovative Research Universities Australia) (2006:4), when citing the SPRU (2002:iii) definition of *third stream* that is detailed above, describe the SPRU definition as a definition of higher education "engagement activity". In the United States of America *third stream* is a term that is more commonly associated with a type of music that is at the boundary between jazz and classical and is

exemplified by Feder's 2002 CD, "Third Stream Music: Modern Jazz Quartet". In the USA the term "technology transfer" can incorporate the substance of what is defined as *third stream* in the UK. Referring to the USA Sutter and Strauss (2007:1), whilst acknowledging that 'the business of technology transfer is a high profile activity of interest to policy makers, legislators, industrial leaders and much of the R&D community', argue that the term has a different meaning to different people. Sutter and Strauss observe that although there are 'different slants' of what technology transfer is, 'some essential general characteristics' can be identified. These characteristics include, firstly, that expertise, knowledge or physical resources 'may be used for purposes not originally intended'; secondly, the benefits may meet both public as well as private needs and, finally, a definition may refer to the 'formal transfer' process 'to the commercial sector'. It is emphasised that technology transfer is relevant to 'teaching-learning activity' (ibid). Harding (2006), in her paper to the Knowledge Transfer and Engagement Forum in Sydney notes her disappointment that learning and teaching have not been addressed in the narrower conceptualisations of engagement and approaches to *third stream* funding' (2006:9). Prince (2007), commenting on the implications of developing *third stream* activity for university schools, states that 'key organisational routines include... programme design, accreditation and validation processes...' (2007:754). King (2007), citing HEFCE (2006e) in a Council For Industry and Higher Education (CIHE) paper, reports that in respect of HEFCE's Higher Education – Business and Community Interactions Survey (HE-BCIS) there is a 'wide range of *third stream* activities of HEIs, such as contract research, business consultancy and services,

commercial ventures, with education and professional training forming a small part of it' (2007:17).

The definition of *third stream* that is provided by SPRU (2002) in its report to the Russell Group of Universities is widely cited (White, 2005; Sheil, 2005; Egan, 2008). The significance of SPRU's definition is perhaps demonstrated by its citation by Egan, given that Egan is Deputy Chief Executive of HEFCE; the government agency responsible for funding *third stream* activities in English higher education institutions. Frost (2008:1), commenting on her experience when assuming the role of Head of Business and Community at HEFCE, was unsure as to 'what precisely was the *third stream* – was it different or the same thing as technology transfer?' Frost reports that her experience of finding the precise meaning of *third stream* to be 'particularly ambiguous and hence frustrating'. This was, Frost states, similar to the position that several people had experienced 'when first encountering the *third stream*' and that these people had informed her that they 'had failed in any attempt to come up with standard taxonomies or nomenclature' (ibid). Frost concludes that one individual's, or an HEI's, definition of *third stream* 'can be very far from another' and that such efforts to define terms can be reductionist; better that individual HEIs arrive at their own understanding of *third stream* and the relevant relationships (ibid:2). This view of the difficulty in defining *third stream* is shared by Hatakenaka (2005) who states that 'there is no fixed recipe or "right answer" as to what comprises *third stream* activities'; Hatakenaka, notes that 'there is an expectation that each university can and should respond differently' to the *third stream* agenda (2005:7). Hatakenaka identifies the issue as to 'whether

third stream activities should be promoted separate from teaching and research’ (ibid:8). Hatakenaka reports that whilst an early definition of *third stream* would include technology licensing and spinouts there are increasing examples of the synergy between *third stream* activities and that of teaching and research (ibid).

The above definitions of *third stream* indicate that the exploitation of knowledge and technology transfer are central to the understanding of this strand of Government funding of higher education institutions. Whilst some commentators focus upon the revenue-raising aspects of *third stream* activities, including ‘liaisons with commercial companies’ (Armstrong, 2009), the inclusion of community as well as teaching-learning aspect, if low in value terms of total *third stream* income, are increasingly referred to by commentators. *Third stream* funding continues to increase and ‘total committed *third stream* funding between 2000/01 and 2010/11 amounts to £1 billion (at 2003 prices)’ (HEFCE, 2009:3). Of this amount, at 2003 prices, £698m has been allocated in the period 2000/01 to 2007/08 and projected funding for the period 2008/09 to 2010/11 is £341m (ibid). HEFCE report that:

‘The most important allocation of funds has gone to activities concerned with dedicated knowledge exchange staff; the promotion of knowledge exchange units, institutes and research centres; and initiatives and projects concerned with knowledge exchange generally’ (ibid).

HEFCE (2009) categorise the range of *third stream* activities into four broad groups. The first group is concerned with the ‘the placement of undergraduate and postgraduate students and staff’. Examples of this are

training company employees, personal secondments to external organisations, or hosting personnel from external organisations. The second group of activities is research-focused such as joint research by both the HEI and the external partner; contract research undertaken by the HEI alone, or the formation of spin-out companies. The third grouping 'may be broadly summarised under the heading of dissemination and networking activities' and involves collaboration such as joint publications and having an involvement with networks that include partners and other external organisations. The final group involves community-based activities such as public lectures to the wider community and community-based performance arts or sports (2009:36). This ongoing, and substantial, commitment to *third stream* activities by government invites the question as to the effectiveness of this aspect of UK Education Policy and this study will consider the impact of policy in respect of the adoption and implementation of *third stream* by Higher Education Institutions (HEIs).

It is important to note that an appreciation of the workings of policy-making is not necessarily as simple as might be expected. Walford's (2003) view of the nature of policy making is that:

'Understanding the concepts of policy and policy making is far from straightforward. There has now been considerable empirical and theoretical work on the nature and of policy development and implementation, and it is abundantly clear that the whole process is far more complex, dynamic and interactive than any of the traditional linear or staged models suggest' (Walford, 2003:2).

This issue of complexity is central to policy making (National Audit Office, 2001) and is discussed further in section 1.2 below. If policy making is as complex as Walford (2003:2) suggests, then, how successful is government education policy given the potential for the process to be frustrated? The propensity for ambiguity demonstrated in the above definitions of *third stream* are themselves evidence of the complexity of policy-making; how is government to formulate effective policy when the policy area in question means different things to different people? The extent of the adoption and implementation of higher education policy, that is the focus of this doctoral research, will be observed by a study of the impact of *third stream* education policy on the role of academics and its effect on the academic community at the three selected host institutions. In doing so, this chapter of the thesis will focus upon several important aspects relating to complexity of education policy.

Globalisation, in particular, has attracted considerable interest from commentators on government policy (Tight, 2004; Ball, 2004; Smith and Langslow, 1999). The direction and role of higher education, the literature suggests, has been affected by the power and influence of globalisation (see section 1.3 below). Section 1.2 below explores the range of pressures that influence policy decisions.

The Complexity of Policy-Making

1.2 The economic prosperity benefits of education that are extolled in UK government policy documents, for example *The Future of Higher Education* white paper (DfES, 2003), are not accepted by all education

policy observers. The notion that education is the key to improved competitiveness in ‘this changing economic world’ is challenged by Fink (2001) who states that ‘the language of “world class” education, whatever that means, is part of the international discourse. The connection between education and economic success is tenuous at best and unproven’ (2001:226). The problem with this debate, in Fink’s view, is that this economic argument has caused policy makers throughout the world to blame the education system for failing ‘our young people, our economy, and us’ (ibid). Fink suggests that where policy-makers are distant from the realities of day-to-day life, they ‘tend to espouse broad philosophies based on their own experience, ideological inclination, or educational background’. Citing Davis (1999), Fink (2001) recalls former Education Secretary Kenneth Baker’s admission ‘that major policy initiatives in England that have influenced countless pupils and teachers were based on personal whim and prejudice’ (ibid:227). How does this former minister’s declaration compare with the general understanding of how the process of policy-making is conducted? Is this apparent *ad hoc* approach to education policy-making merely one person’s view? Has this process been applied to the *third stream* agenda? These are questions that are difficult to answer; however, this research study will explore the consistency of relevant policy declarations.

The traditional view of policy decision making that is popular in the literature (Allison, 1971; Heclo, 1972; Simon, 1947) is that of an event that is attended by a group of authorised decision makers who review both problems and opportunities and, after weighing up the advantages and disadvantages, select a preferred option (Weiss, 1982:624). Weiss

(1982) explains that this process, as described, ‘is commonly referred to as the rational model... [with an] explicit calculation of all cost and benefits for each option’. The rational model is most closely associated with the business sector and remains a part of the curriculum in many business schools. Weiss argues (1982) that most people accept that government problems are rarely “solved” and that any solution generated is likely to be short lived; indeed, the “solution” is as likely to lead to new problems as it is ‘to remove the condition that it is intended to resolve’ (ibid:626). It is suggested that many policy decisions, even those with serious ramifications, are arrived at ‘through jumbled and diffuse processes’. Such is the unremitting daily bustle of government activity, many people, often unconsciously, are directing policy down a particular route because of a series of small steps. Weiss (1982) concludes that ‘overtime, congeries of small acts can set the direction, and the limits, of government policy’ (ibid:627). In such circumstances it is only apparent in retrospect that policy has been made (ibid:). Fenwick and McBride (1981:31) observe that a minor modification in policy may be wrongly assumed to be the first step in a radical departure from traditional policy and that a routine change may, in retrospect, have ‘heralded a complete change in the direction of government policy’. Clearly, it is important to recognise that improvements to the education system, due to change in policy, will require time before the benefits can be experienced (Levin and Kelley, 1994:246).

Commentators have been critical of the lack of clarity and uncertainty in government policies. Levin (2001) recognises this criticism and observes that ‘policies that emerge from the political process are rarely clear and

unambiguous' (2001:143). Levin (2001) argues that, with respect to implementation, these 'confusions are likely to be multiplied as people try to sort out what change might mean'. Individual education establishments struggle to interpret new policy and ascertain the implications for their establishment. Even an apparently clear policy, one in which the policy change is straightforward in terms of what is intended to be achieved and the means for that to happen, when considered from a national perspective, can, as Levin suggests, raise a number of questions from the standpoint of the individual education provider. A complex reform will further compound the difficulty due to the number of issues and their ramifications (ibid:144). Ball (1990), explaining the difficulty of the 'messiness' and 'complexity' of education policy-making comments that 'the changing processes of policy-making in education... have [in the 1980s], to a great extent, outrun the development and relevant analysis and conceptualisation' (1990:7).

This apparent lack of clarity and ambiguity of policies begs the question as to whether the problem lies in the drafting of policy. Walford (2003:2) takes the view that this is not necessarily the case and that the issue is not 'poor drafting of the law, but is usually the result of the constraints within which most legislation comes to be agreed'. There is occasional confusion as to what policy is and Walford suggests that 'Ball's model of "policy as text" and "policy as discourse" is 'a highly illuminating way of beginning to understand this complexity'. Ball's (1993, 1994) description of this model highlights the issue of relating 'together analytically the ad hocery of the macro and the ad hocery of the micro without losing sight of the systematic bases and effects of ad hoc social actions: to look for

the iterations embedded within chaos' (cited in Walford, 2003:2). With the concept of 'policy as text' Ball 'recognises the complex ways in which textual representations are encoded as a result of compromises and struggles' (ibid). Walford notes that 'texts contain divergent meanings, contradictions and structured omissions' (ibid:3). The reality of this occurrence, as Codd states, is that 'a plurality of readers must necessarily produce a plurality of readings' (1988:239). Different interpretations are bound to lead to different forms of implementation.

It is difficult for policy-makers to exert control of the range of possible interpretations of their texts. Ball is concerned with omissions as well as content and comments that 'perhaps it [critical policy analysis] concentrates too much on what those who inhabit policy think about and misses and fails to attend to what they do not think about' (Walford, 2003:3). This leads on to Ball's 'policy as discourse' which addresses important issues such as 'the limitations on what can be said and thought, and also who can speak, when and with what authority'. Policy as discourse inevitably takes time and results in some interpretations being more dominant than others as the 'actors are embedded within a variety of discordant and contradictory discourses'. Where government support certain discourses, and having the levers of power, these discourses tend to prevail (ibid). Walford (2003) emphasises that the popular view that 'some people are policy-makers while others implement "policy" simply does not hold' (2003:4). The divergent 'meanings, contradictions and structured omissions' of texts will produce different understandings and, Walford argues, these diverse readers are, in a sense, 'also policy-makers'. Notwithstanding, this view, Walford concludes that 'policy as

discourse acts such that some interpretations and some patterns are more likely than others' (ibid). Codd (1988) takes the view that, recognising the anonymity of authors and the diverse readers, 'instead of searching for authorised intentions, perhaps the proper task of policy analysis is to examine the differing effects that documents have in the production of meanings by readers' (1988:239). Taylor (1997), citing Dale (1994), identifies the need for an increase in comparative work and suggests that 'policy texts need to be analysed within their context and also in relation to their impact on policy arenas in the broadest sense' (1997:1885). With respect to policy discourse, Taylor argues that discourse theory has enabled 'us to address the complexity of education policy' (ibid:1884).

The complexity of policy-making has been recognised by the national Audit Office (NOA) in its report entitled *Modern Policy-Making: Ensuring Policies Deliver Value for Money* (2001). The NOA explains that in addition to the reality of a better informed population; 'with rising expectations of what policies should deliver', there is frequently a requirement for urgency in policy-making due to emergency conditions. The NAO notes that 'policy-making is often necessarily a complex undertaking' and that this 'involves reconciling conflicting priorities and risks through analysis and judgement to arrive at the most cost effective option and to determine the management required to implement and maintain policies over the longer term' (2001:5). Fink (2001), citing Capra, 1983; Wheatley, 1994; Fullan, 1991; Peters, 1999; and Stacey 1995, argues that the universe is now seen as chaotic and can only be understood 'through patterns of relationships and connections amongst its components'. What is required, it is suggested, is 'an educational vision

that anticipates changing social forces'. The implication for implementers is that they 'face a non-rational, non-linear, complex and, some would even suggest, chaotic reality'. This situation that implementers face is further compounded by policy-makers, if Fink is correct, when he suggests that 'because they are politically more powerful, they can insist that implementers conform to their reality' (2001:230). This assumes, of course, that there is clarity of policy and that the requirements of implementers are clearly communicated and appropriately resourced.

In many circumstances implementers are faced with scenarios with which Barnett (2000) terms 'a situation of *supercomplexity*'. Barnett describes complexity as existing 'when there is a surfeit of data, ideas or resource demands *within* a relatively given situation'. Supercomplexity, by contrast, is defined by Barnett as 'when the basic framework governing the situation is challenged'. An example is given of supercomplexity when a doctor still has to attend to all aspects of patient care, including updates in professional practice and familiarisation with new drugs, whilst now having to also act as a resource manager; understand alternative medicines and come to terms with the vast array of new technologies (2000:115). Universities are not exempt from this trend and Barnett offers the entrepreneurial model as an example of supercomplexity affecting universities. The conditions affecting this aspect of university provision are 'collective spontaneity, the engagement with multiple constituencies, and the institutional responsiveness that is required'. All of this involves academic staff to 'project themselves into more public arenas' (ibid:117). This exposure to the world of commerce is not the traditional role of academics and few lecturers give *third stream*

funded activities as the main reason for pursuing a career in higher education. For many academics, this increasingly prominent area of university activities is seen as an intrusion upon research and teaching and they 'would rather seek the relative stability of the inner-oriented academic life'. The complexity of the external environment affects both university managers and academic staff (ibid:123). Job titles found in UK universities during the last decade such as 'business development manager' or 'director of partnerships' reflect both the diversity of provision and the spread of new managerialism across the higher education sector. The phenomenon of new managerialism is discussed further in section (2.5) of this thesis.

In the twelve years that the Labour Party has been in power in the UK there has been a proliferation of education policy documents presented to educationalists for implementation. This position is not unique to the current administration and the previous Conservative government displayed similar tendencies. This led commentators to suggest that there is a view that government is making considerable effort to impose a much higher degree of central control on the education system (Dale, 1989:15). The successive Conservative governments from 1979 through to the mid-1990s have initiated a number of reforms that have been influenced by what became known as New Right ideologies (Barton, 1994:532). Hargreaves (cited in Barton *et al*, 1994:533), commenting on the Conservative education reforms, notes the 'frantic pace, extreme scope and breadth of the legislative powers used by Government'. Hargreaves suggests that the education sector, in addition to adapting to increased government forces to raise academic standards, is also facing pressure 'to

contribute to the task of economic regeneration'. This imperative is a major element of the *third stream* policy that the current administration has adopted. This is discussed in greater detail in chapter 2 of this thesis.

Trust in politics has waned and as a consequence, it is suggested, politicians are elected to office on a programme and government places 'more emphasis on making and fulfilling a specific set of commitments'. A significant point is that 'a political program sets limits to what will be done, but the extent to which and ways in which any political program actually comes into effect is not predetermined' (Levin, 2001:65). However, how is the 'what will be done' determined? Is policy merely the whim of politicians as they seek to get elected, re-elected, and promoted? What are the influences? Globalisation has been identified as a major influence (see 1.3 below); what are the other sources of influence? The National Audit Office (NAO) reports (2001) that policy options are developed in a variety of ways. In some cases 'departments have centralised policy units' whilst 'in others policy is developed by the lead division responsible for the sector or subject'. Cross-cutting departmental policy problems are frequently dealt with by central units that are 'often based in The Cabinet office'. Such units 'may also play a role in implementing and monitoring policies'. It is also noted that:

'Departments do not generally adopt one single approach or model to design and implement policies. The range of factors involved – different time pressures, the need for new legislation, shifts in public and political opinions, and the wide mix of stakeholders including both those who might be affected by policy and those who have to implement it, mean that a single uniform "one size fits all" policy approach is not practicable' (2001:33).

The NAO points out that it is important that the approaches to policy-making by government departments are sufficiently flexible to be able to respond to the numerous sources of policy initiatives, ‘both from within a department and from external influences’. The pressures are for modification of an existing policy or the introduction of a new policy (2001:33). The National Audit Office, in discussing how the need for a policy is identified, details sources both from *within* departments and from *outside* government departments:

From within departments -

- European Union policies such as those on competition
- Ministers’ ideas and suggestions
- Policy reviews and evaluations of existing policies
- Devolution or regionalisation shifting policy responsibility
- Responding to changes in other departments’ policies
- Analysis of expenditure and revenue trends

From outside departments -

- Manifesto commitment
- Parliamentary Select Committees
- External events such as the emergence of BSE (bovine spongiform encephalopathy; known as mad-cow disease)
- Technological advances such as IT leading to services on-line
- Legal judgements by the Courts

- International treaties such as trade and environmental protection
- Public concerns, such as the safety of trains, articulated via letters to MPs and Ministers as well as media coverage
- Lobby/pressure groups such as on environmental issues

It is essential that information used to determine the need for a change of policy, or indeed new policy, is both ‘reliable and comprehensive’ to ensure that decisions relating to policy direction ‘are more evidence-based’ (2001:34). Scenario planning is advocated as a means of evaluating the policy implications of ‘a range of different circumstances’. This technique allows a department to decide ‘what a policy may have to respond to and also in estimating the likely impact of a policy’. Despite the apparent attractiveness of using scenario planning, the NAO reported that it found that ‘departments’ use of scenario planning was limited largely because they often lacked the specialist expertise to apply it’ (ibid:35). The use of scenario planning, although relatively new to the armoury of policy planning tools used by government departments, would appear to conform to what Codd (1988) describes as the ‘technical-empiricist’ approach to policy-making. This approach is seen as ‘the traditional view of policy-making’ where there is production of ‘a body of knowledge encompassing various factual explanations and causal connections which policy-makers may then draw upon for the formulation of policy proposals’. It is suggested that using the ‘general laws and theories’ generated, ‘the policy-maker must then decide the “best means” of achieving certain predetermined goals’. This view of policy formulation, Codd argues, ‘treats education provision as a set of means to given ends’ (1988:237). It is generally assumed then that the

resultant policy documents will set out the intentions of the government. Codd (ibid), citing Wimsatt and Beardsley (1954), states that this assumption ‘has come to be known as the *intentional fallacy*’ (ibid:238). Going further Codd (ibid), citing Lyas (1973), points out the following:

- First, it is a mistake to think of intentions as private mental events.
- Second, intentions are not the same as ‘statements of intention’.
- Third, we must distinguish between an intention in the sense of a prior plan or design and an action that is done intentionally.

Put simply, it would be wrong to assume that policy-making follows a rigorous process that identifies the best policy solution to a particular problem (ibid). Some definitions of policy-making used in business are outdated in comparison to those found in social science literature where the complexity is more readily acknowledged. Codd explains that the crucial issue is ‘that nothing can be said about an author’s intentions apart from the various features of the text itself and the context in which it is interpreted’ (ibid:239).

Many governments operate a top-down compliance model when seeking to implement change. Fink (2001) suggests that there is a pattern across the globe for governments to ‘manufacture an educational crisis by naming, blaming and shaming educators for real and alleged failures in the [education] system’. This ‘crisis’ then provides the opportunity for government to bring about change with an emphasis on ‘more content and “higher” standards; change structures of governance to reduce local

political control, and reduce funding in the name of efficiency'. A general view, Fink (ibid) states, is that the media, business leaders and certain politicians identify educators as 'the source of most problems'. This then, leads to processes that require educators to 'comply with mandates through elaborate and usually expensive accountability measures' (ibid:231). The introduction of standardised testing and/or inspection is intended to 'provide evidence of change'. Policy-makers, it is suggested, use Ofsted to ensure that implementers of policy carry out reforms in a way that policy-makers perceive as successful introduction of the intended change.

Cuban (1998), cited in Fielding (2001), observes that a major criterion for policy-makers is popularity and, accordingly, a climate of 'crisis and urgency' is created by the use of such language (2001:234). This then creates policy opportunities to address the "problems" 'before another election' (Fink, 2001:234). Fink (ibid) concludes that complex educational issues can only be addressed when policy-makers and policy-implementers 'understand each other's world, and work together' (ibid:236). Whitty's (1997) view is that 'we need to create new contexts for determining appropriate institutional and curricular arrangements on behalf of the whole society'. In order to avoid education becoming 'merely a private consumption good', Whitty (1997) suggests that there should be 'new forms of association in the public sphere'. It is intended that such a body would reassert citizen rights with regard to education policy (1997:2071). As far as UK higher education policy is concerned, Kogan and Hanney (2000) advocate that, due to the independence of institutions, 'a series of the important reforms in areas which elsewhere

might be regarded as the responsibility of central authorities were not imposed by the government.... but, instead, had come out of the institutions themselves' (2000:203). It is suggested that a range of major changes such as 'admissions policy, the curriculum, teaching and assessment methods' have 'had nothing to do with governments'; the belief is that 'if it's a good reform it spreads out' (ibid:204).

Funding as a Policy Lever

1.2.1 It is likely that the UK Government would disagree with Kogan and Hanney's (2000) conclusion. Taking the funding of higher education alone as a lever, government has had considerable influence on the growth or demise of selected curriculum areas. Scott (2000) argues, in a discussion of the pressure on higher education to see the student as a consumer, that there is likelihood 'that the biggest change to higher education in the twenty-first century will be the radical restructuring of its finances'. Citing Gibbons *et al* (1994), Scott (2000) identifies the move away from:

'the production of knowledge based on institutionally constructed academic disciplines towards forms of production based on the application of knowledge to specific problems in specific social, economic, and commercial settings' (2000:90).

The reorganisation of the funding bodies for universities in the fourth quarter of the last century, with the move from the University Grants Committee (UGC) to the Universities Funding Council (UFC) then to, finally, the Higher Education Funding Councils was a significant move in the funding of HEIs. Kogan and Hanny (2000), citing Salter and Tapper (1994), suggest that the establishment of the UFC was the most important

of the changes ‘as it marked a significant break with the past’. Salter and Tapper (1994) are quoted as saying that ‘the central state created a new organisation, the UFC, with the express intention of making its power felt’ (2000:169). Whether this statement is entirely true is more difficult to validate, however, there is evidence that government does evaluate the effectiveness of its funding. An example is the Economic and Social Research Council (ESRC) funding for a pilot study by the Science and Technology Policy Research Unit (SPRU) to ‘assess the impact on non-academic audiences of research funded by the Council’ (2000:171). The SPRU project, it could be argued, is a prudent way of ensuring value for money. Other commentators may see it as unnecessary expenditure and an unwelcome interference.

The way that the UK funding councils allocate resources, with regard to teaching, has changed to ‘a system of “equitable funding”, meaning that similar activities are funded at similar rates for all institutions’. Public funding of research operates ‘under a dual support system’ with the funding provided by the funding councils ‘to provide the underlying infrastructure upon which funds provided by the research councils can rest’. Quality ratings largely determine how research funds are distributed amongst universities (Jongbloed and Vossensteyn, 2004:262). Cannon (2001:113), reports on the recognition of the primacy of Governing bodies at higher education institutions and that as long as ‘they are willing and able to fulfil the responsibilities allocated to them, the state should be able to respect the autonomy of institutions’. Failure to achieve this end and, Cannon suggests, the funding councils may be forced to erode further the autonomy of institutions’. For some higher education

institutions (HEIs), this may present a significant threat. These “responsibilities” that Cannon (ibid) refers to increasingly draw from business management. The introduction of market-focused education reforms is not a new development and an outline of such reforms is set out in section 1.4 of this chapter. The following section, 1.3, examines the impact of globalisation.

Globalisation

1.3 A necessary prerequisite to exploring the process of UK policy making is to examine the impact of globalisation on sovereign countries. There has been much debate about what constitutes ‘globalisation’ and Dale (2007) argues that, when considering how ‘policies are formed, shaped and directed’, globalisation ‘does constitute a new and distinct form of relationship between nation states and the world economy, but that it takes many forms’ (2007:48). Dale’s view is that globalisation has affected the policy making procedures; in content and form, ‘and outcomes of all states’. A major effect of globalisation is that, whilst these states retain their sovereignty, they have ‘to a greater or lesser degree, lost some of their capacity to make national policy independently’ (ibid). With respect to education policy, globalisation has a particular relevance. The competitiveness of the UK in the global market is a frequent theme of ministers and can be discovered in an array of government policy documents. In a recent education policy document produced by the newly formed Department for Innovation, Universities & Skills (DIUS), *World Class Skills: Implementing the Leitch Review of Skills in England* (July 2007:9), it begins in the Executive Summary by stating an aspiration ‘to sustain and improve our position in the global

economy'. It is usual for a reference to competitiveness to be accompanied by a declaration of the emergence of new technologies and the importance of the UK's success in the new knowledge based economy.

The importance of knowledge as an economic driver and an influence on policy is noted by Foucault (1991): 'Knowledge is viewed as a vital source and vehicle for economic prosperity' and this has implications for power 'in regimes of discipline, regulation and government' (Foucault, 1991, cited in Ozga *et al*, 2006:105). Dale notes that 'globalisation foregrounds education in specific ways that attempt to harness education systems'. Recognising the global opportunities, education policy-makers, Dale (2007) states, 'promote the attractiveness of their local products in the global market'. The capacity for international competition is frequently given as the reason for such action. In addition, it is noted that the actions of governments are geared to securing 'roving capital' in what, is hoped, will be a long-term relationship (2007:70). The problem, of course, with 'roving capital' is that it can move out just as effortless as when inward investment is secured. A related global development, the relationship between education and competitiveness, is discussed below.

A dominant feature of universities throughout the world is the increasing focus upon 'enhancing students' skills in preparation for an increasing(ly) competitive labour market' (Carnoy, 2000, cited in Ozga *et al*, 2006:200). Meyer *et al* (1992), cited in Ozga *et al* (2006:200), suggests that this mass education system, as some scholars see it, has resulted in similarities in 'education ideologies, administrative structure and instructional

practices'. Although the belief that education offers benefits to 'the whole society' (Adam Smith, 1776, cited in Florax, 1992:41) is not new, it was not until the 1960s that 'the idea of education as an investment in people was worked out'. This became known as human capital theory. In respect of the idea of human capital, some commentators believe that the theory has developed such that labour heterogeneity is seen, in part, to be due to education and that differences in earnings can be sourced to differences in education (ibid:43). This belief, that education gives a positive rate of return, has resulted in an international growth in demand. Growth, however, is not restricted to the demand for higher education and, Blight *et al* (2000) argue that university research will similarly experience increased demand and become a driver of change in the new millennium. It is suggested that such forces are already happening and that 'they are irreversible. Policy-makers, institutions, corporations and individuals will respond to the growth in a variety of ways' (2000:95). The internationalisation of universities, the use of new technologies and strategic alliances are seen as responses to globalisation (ibid).

It is suggested that globalisation has been welcomed by many sources and that they see 'the process of globalisation as conferring considerable benefit on universities' (King, 2004:52). Going further, it is noted that there is a belief in some quarters that they 'would prefer, if anything, that globalisation picked up the gallop in higher education'. Alternatively, other commentators are of the view that 'the publicly funded university is changing forever under the constraints of globalisation' (King, 2004:52). Delanty (1998), cited in Robbins and Webster (2002:318), argues that 'knowledge is increasingly being globalised-detached from its traditional

reliance on the nation-state and its custodians, the intellectuals and university professors' (2002:318). Held (1991), cited in Olssen *et al* (2004:4), states that, due to new technologies, a feature of the relationship between markets, governments and political groups is that they become 'more sensitively adjusted'. Whilst globalisation has been developing since the early 20th Century, in more recent times Olssen *et al* (2004) suggest that 'states have a diminished capacity to protect their borders against private international decision-making'. However, they argue, this occurrence is 'only in some arenas and in some issues' (ibid:255). The demise of the nation state and its influence, due to globalisation, is, in King's (2004) view, exaggerated. King argues that 'national governments still exert considerable regulatory authority over university systems' (2004:52). The authority to adjust the level of fees and funding are given as examples of the levers that government controls as it targets particular social groups when following a widening access agenda. Also, government can focus resource upon certain areas for research where it is felt appropriate 'to help secure best comparative economic advantage' (ibid).

There are differing views about the influence of globalisation on the policy making of sovereign states. Whilst some commentators see the growing trend of globalisation as a negative, other writers take the view that nation-states have the capacity and levers to make national policy independently of global forces. Brown and Lauder (1996), cited in Ball (2004:49), argue that Fordist principles are no longer appropriate to deliver 'the skills, knowledge and insights of workers' that are required under the 'new rules of wealth creation'. It is suggested that the 'human

side of enterprise is a crucial factor in winning a competitive advantage in the global economy'. Globalisation intensifies the complexity of policy making and, in many cases, is a major influence on government decision making. It is recognised that 'globalisation is a topical and contentious issue not just for academics but also for politicians' (Deem, 2001, cited in Tight, 2004:289). Globalisation, no matter how significant an influence, is, as demonstrated in section 1.2 of this chapter, only one of several forces that affect policy making.

Background to UK Education Policy Developments

1.4 A number of the current market-focused education reforms, including *third stream*, have been influenced by the Conservative government reforms of the 1980s and the 1990s. Whilst it is acknowledged that Shirley Williams, Minister of Education in a pre-Thatcher Labour Government, had established a 'voluntary code for change in higher education'; it was the Thatcher reforms that had the greater impact. Whereas the Williams' voluntary code was ignored, Warner and Leonard (1997:1) argue, 'the Thatcher revolution had hit education [and] at first it was a great shock... she coupled the use of the carrot with that of the stick'. In the early 1980s universities suffered substantial cuts in funding by the Conservative Governments. Universities had to seek alternative funding streams. The impact of the Thatcher education reforms, Warner and Leonard (ibid) suggest resulted in 'almost overnight higher education managements (and they had rarely been called that previously) were required to manage; a new language was adopted and a new breed of educational entrepreneurs was born'

(ibid). This new language, which is now widely used in the higher education sector, includes terms such as ‘marketing’, ‘enterprise’ and ‘entrepreneurial’ (ibid). Ball (1994:4), commenting on the UK Education Reforms of the Conservative Government in the 1980s and 1990s, observes that ‘a set of basic tensions are embedded in the Conservative educational state’. The problems, Ball argues, fall into three ‘fields’ of problems; capital accumulation and economic efficiency; social order, social authority and stability; and, finally, the problem of state governance and control. Ball (ibid:5) concludes that whilst these problems drive and inform policies, they also ‘produce tensions and incoherences within policy making’. It is Ball’s view that the main developments in Conservative education policy come from these ‘fields’ of problems and that policy developments can be better understood when related back to ‘these generic problems’. It is clear that Ball sees some shortcomings in the education policy reforms of the Thatcher Government. Do these concerns hold true in the higher education sector in the new millennium? Is government education policy unambiguous and is its implementation effective? What insights will the application of Ball’s ‘tools’ provide? The methodological issues relating to the use of Ball’s ‘tools’ are located in chapter 4 of this thesis and the application of Ball’s ‘policy as text and discourse’ can be found in chapter 3.

When commenting on the importance of the workings of the state in the formulation of education policy, Ball (1994:10) argues that ‘education policy should not be limited to a state control perspective’. Going further, Ball asserts that ‘policies are always incomplete’ and it is his view that they are ‘crude and simple’. By contrast, Ball sees practice as being

‘sophisticated, contingent, complex and unstable’. Whilst not underestimating the impact of Conservative education policy, Ball, suggests that changes are externally imposed; come all at once and have short lead times. It is significant that the general view of practitioners is that policy initiatives are ‘all massively under-funded’ (Coopers and Lybrand Deloitte cited in Ball, *ibid*:11). A further complication in understanding and measuring the effectiveness of policy is that, as Ball observes, ‘policies shift and change their meaning in the areas of politics’. A new secretary of state will often represent policy in a different way to that of his/her predecessor. It is suggested that a change of minister may well be a deliberate attempt to change the meaning of the Government’s policy (*ibid*:17). White and Crump (1993:423) quotes Ball (1990) as describing the Conservative Education Reform Act 1988 as containing ‘a number of shots in the dark’. With further reference to Ball’s research, White and Crump report that the 1988 Act ‘was “handed down” to institutions, following the notion of hierarchical structure and management’. It is suggested that there had been no input to this policy from either educationalists or industrialists (*ibid*:426). The 1988 reforms had significance for higher education as this Act, amongst other things, changed the way that HE was funded. The introduction of this policy reform corresponds with the uptake of income generation activities in the higher education sector. Income generation is generally regarded as the forerunner of *third stream* funded activities.

Torres (2004:156), informs us that policy-making has been commonly analysed in a variety of ways such as; ‘the production of interaction between political controllers and professional providers of service’ (citing

Sarran, 1973) and with a ‘focus on timing and feasibility as crucial elements in policy-making’ (citing David, 1997). Government, Levin (2001) argues, ‘generates both peoples’ deepest hopes and aspirations and their highest levels of cynicism’. Levin (ibid) suggests that, having studied literature from several disciplines, ‘policy-making should take account of a number of themes including; the desire of politicians to stay in power’. He also suggests that the complexity of problems is too great for human abilities and that reform intentions are often ‘politically salient’ but fail to deliver the necessary changes. An important theme is that institutions ‘possess considerable ability to resist or alter policies to fit their own dynamics’ (ibid:22). Adoption, as Levin (ibid) terms, is when the initial policy proposal is progressed ‘to its final form in an approved piece of legislation, regulation or other vehicle’ (ibid:115). By this time the policy formulation process may well have been subjected to a considerable number of influences from a variety of sources.

Given the complexity of government education policy, the range of problems and actors, it is not surprising that policy initiatives frequently do not emerge as intended. The question may be asked as to why *third stream* policy should be any more effective than other areas of education policy. The benefits of educational research, such as this thesis, are that the research can result in ‘specific findings upon which to base educational decisions’ (Blai, 1993:53). However, by contrast Broadfoot, in her paper *Educational Research through the Looking Glass*, appears to be less convinced as to the value of educational research in providing answers for policy-makers. Broadfoot (1979:135) states that ‘so complex is the educational enterprise and so manifold its interrelations that it is

seldom, if ever, possible to provide unqualified accounts of cause and effect'. Whereas Broadfoot considers the value of educational research to be limited in relation to education policy and decision making, Robertson (1997:77), argues that it is inevitable that contemporary analysis will consider the impact of a study such as the Dearing inquiry [The National Committee of Enquiry into Higher Education ('Dearing Committee')]. Robertson suggests that 'a body of this nature can provide a timely occasion for reflection, and can sometimes lead to far reaching proposals and the formation of a new consensus'. However, as Robertson points out, he is less sure as to whether this consensus will result in the changes that may be necessary for a modern system of higher education or 'whether the review will simply marshal the vested interests of the sector into a cosmetic rearrangement of the past'. With respect to aspects of Dearing that impact on the *third stream* agenda, Professor Sir David Watson, a member of the Dearing Committee in 1997, reports in his 2007 inaugural professorial lecture at the Institute of Education, that 'we continue to agonise over how to improve the role of business and industry as "intelligent customers" of HE goods and services, including following the Lambert Review [of Business-Industry Collaboration in 2003]'. More positively, Watson reports that 'ideas about an Industrial Development Partnership Fund have borne fruit in formula and competitive funding for "third leg" [an alternative name for *third stream*] and other elements of the [2004] Science & Innovation Strategy' (2007:6). It would seem that, in Watson's view, although this aspect of policy has achieved some measure of success in its implementation, there remains, ten years after the Dearing Report to government, a degree of indecision as to how business and higher education can maximise potential synergies.

Influencing Education Policy Outcomes

1.5 There would appear to be a strong case to support the view that education policy does not emerge as planned. Also, there are a number of commentators who conclude that research into education policy does not directly impact on policy. Fletcher (1994:58), citing Husen and Kogan (1984), suggests that the impact of research on policy is diffuse rather than direct and he describes the relationship as ‘more associative than causal’. Weiss (1982), who generally acknowledges that outsiders such as university researchers are frequently disillusioned by the ‘absence of dramatic response’ to their policy-orientated studies, advises researchers ‘don’t leap to the conclusion that research is ignored’. The expectation that there will be an immediate and direct impact on policy from research results, Weiss argues, is often unrealistic. Weiss advocates that although it may appear that ‘research leaves few ripples’ in the policy arena, it should be noted that government channels are bureaucratic, learning is accrued, and that it is ‘premature to make that judgement’ on the effect of research on policy formulation, without further analysis (1982:633). The paradox is that whilst there is ‘increasing pressure on social and educational researchers to make their work have greater impact on policy-making and practice’ (Hammersley, 2002:83), commentators have observed that ‘there has long been concern about the lack of impact of research on policy and practice’ (Hammersley and Scarth, 1993:216). McIntyre (1998) suggests, similarly, that this ‘lack of attention to research’ by policy-makers ‘has been a frequent source of irritation’ to researchers (Rudduck and McIntyre, 1998:194).

Even when policy is clearly thought out and communicated there may be resistance to adoption of education policy. In some education establishments there are individuals who are seen, and see themselves, as being 'heroic' in their stand against an unwelcome reform (Levin, 2001:149). Often the reason given for the resistance will be that the action is intended to uphold professionalism. It is worth noting that 'resistance need not be overt' and academic staff and administrators 'have many ways of either advancing or inhibiting the goals of a policy' (ibid). In many ways, from a management perspective, it is much more difficult to deal with passive resistance rather than managing those individuals who are vocal about their issue with a policy. The difficulties of introducing change are well documented. Land (2004), citing both Rogers (1967) and Havelock (1973), notes that 'the classic tradition of research into change and innovation views the development of innovations as a process of *diffusion*' (2004:187). Rogers' famous 'Diffusion of Innovation Curve' demonstrates the occurrence that different identified groups of individuals have a greater or lesser inclination to embrace new innovations. Fink reminds us that policy-initiators and policy-implementers 'have a different orientation to the change process' (2001:228).

This section of the chapter started with an observation that education policy may not emerge as planned (page 38) and goes on to suggest that there may be resistance to education reform (page 39). The conclusion that follows outlines what chapter one of this thesis has accomplished and details the connectivity with chapter two.

Conclusions

1.6 Chapter one has established the context for this study and provides a clear perception of the complexity of policy-making and a comprehension of the imprecise nature of the process. A definition has been identified for the *third stream* higher education theme. It has been reported that HEFCE (Higher Education Funding Council for England) is positive about the efforts of many institutions in demonstrating the necessary leadership and enterprise to meet required changes that are essential if *third stream* policy initiatives are to be successfully implemented. Notwithstanding HEFCE's confidence in the response of higher education institutions to this area of education policy, from the outset of this doctoral research an extensive study of the literature has shown there appears to be a strong case to support the view that education policy does not, if ever, emerge as intended. What is clear is that policy and policy-making is a complex and dynamic process and that the view that the process is linear in form is misplaced. It is noted that several commentators believe that government policies demonstrate uncertainty and a lack of clarity and are frequently unclear and ambiguous. It is said that policy is, at times, delivered unconsciously by many people taking small steps. There is an opinion that policy-makers and policy-implementers need to have a better understanding of their respective environments and be prepared to work together. The question for this doctoral research is whether *third stream* policy is anymore effective than other areas of education policy. This is a subject of considerable importance due not only to the level of *third stream* funding HEIs receive; but also due to the potential impact on the United Kingdom

economy of these activities. The complexity of policy is such that a qualitative approach has been applied to this study.

This chapter has identified an appropriate ‘tool kit’ to enable an understanding of the effectiveness of policy. The application of critical analysis, the use of Ball’s “texts” and “discourse” and the ethnographic method approach are important components of this study. Ball’s influence in the policy analysis arena is substantial and he offers his ‘tools’ as a means of revealing the true picture of policy and policy-making for those who are the recipients (1994:1). Ball asserts that policy is crude and simple and is never complete. It is reported that there has been a lack of consistency in the direction of higher education policy during the 1980s and 1990s.

Finally, the picture that is emerging from the review of the literature in chapter one of this thesis is that policy and policy-making is not a precise science. The literature reveals that the complexities of the task, and the self-interest and the ability of the policy makers, frequently result in confusion and ineffective policy. It is important to note that policy-initiators and policy-implementers take differing positions on the need for change and the change process. It has been suggested that the globalisation phenomena has had an impact on education policy. A major issue that this doctoral research is addressing is whether the reported problems with education policy, which have been identified in the literature review, extend to the government’s initiative to promote *third stream* activities in UK higher education institutions.

Through undertaking this doctoral research, the author of the thesis seeks to make a contribution to knowledge. Although much has been written about education policy in general; policy research with a *third stream* focus, it is felt, is very much overdue given the enormous potential that the exploitation of university research and development offers and the substantial funding that it attracts. With regard to previous studies of policy making, Ball (1990), cited in Taylor (1997:23), notes that commentary and critique have dominated policy analysis ‘rather than empirical research’. This doctoral research study addresses both theoretical and empirical characteristics. The following chapter examines the UK *third stream* education policy more closely, exploring the opportunities and challenges of the policy, and includes comparisons with the established *third stream* systems in the USA. The views of commentators, expressed in the literature, on academic autonomy and new managerialism are also explored.

Chapter 2

HE Development and Third Stream Education Policy

2.0 The first chapter of this thesis has identified the complexity and imprecise nature of the process of government policy-making and it has been reported that policy rarely emerges as intended. The descriptions of policy-making reported in chapter one frequently highlight both a lack of clarity and ambiguity. In chapter two, building upon the definition of *third stream* that was identified in the previous chapter, there is a more detailed exploration of UK *third stream* policy. A central consideration for this study is whether *third stream* education policy in the United Kingdom is clear to policy-implementers and is effective in its delivery. Additionally, in this chapter, there is an explanation of several of the interconnected terms that surround the *third stream* agenda such as academic capitalism, entrepreneurial universities and technology transfer. The impact of *third stream* policy on university culture is an important issue and it is also discussed; as are changes to academic autonomy and the increasing establishment of new managerialism in HEIs. There is a question as to whether the UK is at the forefront of *third stream* developments amongst developed nations and, accordingly, there is a comparison with the more established *third stream* developments in the United States of America. This section of chapter two commences with an explanation of *third stream* as one of the four themes that permeate UK higher education funding.

There are four main strands of activity in higher education in the UK; teaching and learning, research, the strengthening of links with business and the wider community and, finally, widening participation. In England HEIs (Higher Education Institutions) are funded by the Higher Education Funding Council for England (HEFCE). In 2002-03, out of HEFCE's £5.1 billion of HE funding, teaching and learning received £3,271m and research was allocated £940m (HEFCE Annual Report, 2002-03:26). The majority of HEFCE funding is allocated by formula in the form of recurrent grant. Special funding (£443m in 2002-03) is available for specific purposes and is usually allocated by conditional grants or, on occasions, through a competitive bidding process. A substantial element of this targeted funding is knowledge and technology transfer projects such as those funded by the joint Higher Education Innovation Fund (HEIF). 'Such funds are often called *third leg* or *third stream* because they are in addition to the two main funding streams – for research and for learning and teaching' (ibid:14). *Third stream* funding supports HEIs in a wider economic role including consultancy services to business, the establishment of spin-out companies, intellectual property and other income generating activities (see Appendix A). HEFCE targeted funding complements the Office of Science and Technology (OST) funding for university/business initiatives. In 2005-06 HEFCE higher education funding increased to £6.7 billion (HEFCE, 2006d:2), of which, £106.6 million was allocated to 'business and community' [*third stream*] (ibid:69); the respective figures for 2007-08 are £7.3 billion (HEFCE, 2008:3) and £110.4 million (ibid:81).

In 1999, Sir Geoffrey Holland, Vice-Chancellor of the University of Exeter, commented that 'higher education is the great, largely unknown and certainly underexploited, resource contributing to the creation of wealth and economic competitiveness' (Gray, 1999:xi). Holland observes that those outside of higher education do not appreciate, or understand how to access, the resource that higher education offers. Equally, Holland suggests that 'those inside HE do not know how best to connect with the world outside'. He argues, forcefully, that 'universities have barely begun to make the contribution they could to wealth creation and economic development'. Going further, Holland illustrates the shortfall in provision by noting that even in departments of business studies the changing needs of business 'have barely begun to be addressed'. Holland does, however, recognise that higher education has, through research, 'underpinned some of the most successful and important technological and other advances'.

Etzkowitz (2000:319) observes that, in the UK, government funding for university research 'has become dependent on the perception of whether it will make a direct contribution to the economy'. The suggestion is that, under both conservative and labour administrations, universities have responded, in part to government policies, by engaging in 'exchange activities such as licensing patents and establishing innovation centres'. Etzkowitz notes that the relations now experienced between the knowledge producer and the knowledge user have caused 'the re-configuration of institutional relations'. The consequence of this development is said to be a move from grant funding of higher education to an exchange economy where there is a new order that requires, and rewards, entrepreneurship. These rewards may well involve academics

securing intellectual property rights (IPR) and enjoying a share of any benefits resulting from commercialisation of the academic's research. Etzkowitz recognises that it has not been easy for universities to 'construct new regimes' that enable the commercialisation of research (ibid:320). An example is given where in a study of university industrial liaison offices, it was found that IPR policies at these institutions were frequently ignored by academics (ibid:320). There is further discussion of entrepreneurship in Section (2.3) of this chapter.

There is some concern whether, in this era of mass higher education, universities can expand research in line with the expansion in teaching. In the early 1990s Elton (1992:258), citing Trow (1987), argued that there is no evidence of research capacity keeping up with the expansion of teaching in a truly mass higher education system. Elton contradicts the view of the then UK Secretary of State for Education that 'the bulk of English (sic) higher education will continue to be given by people who combine teaching with research'. This position was not shared by the Secretary of State for Education in the early 2000s. In 2003 a major plank of education policy was the introduction of foundation degrees which, it was intended, will mainly be delivered in further education colleges (DfES, 2003:57). The participation rate of 15% that Trow (1987), cited in Elton (1992:257), regarded as the divide between the transition from elite to mass higher education was achieved in the early 1990s. The participation rate in higher education by those aged 17-30 years 'has fluctuated from 39.2% in 1999-2000 to a peak of 42.5% in 2005-06. It currently stands at 39.8% in 2006-07' (NAO, 2008:11). The UK Government HE participation rate target for 2010 is set at 50%. The

landscape of higher education has clearly changed in the last two decades. There are increasing tensions regarding the allocation of research funding to the so called elite universities. The funding for *third stream* activities is particularly targeted at non-research intensive universities and is intended to encourage these institutions to work with business (DfES, 2003:6). This can be seen as being divisive and contradictory; divisive because this further reduces the less research intensive universities' research base compared to that of 'elite' universities, and contradictory because the opportunities for wealth creation, as suggested by Holland and noted above, will be restricted to applied research. Although applied research can offer commercial benefits it may not offer, in the context of the government's policy, the longer-term, ground-breaking research that is pursued by the UK's top rated research universities. Alternatively, there will be those who see applied research as an important steppingstone, particularly for 'new universities', towards the high value research that so often attracts more generous funding from the Research Councils. The following section (2.1) below details a number of significant changes that the higher education sector has experienced since the expansion of higher education began in the 1960s that are linked to changes in UK government policy.

Higher Education Policy

2.1 Although a selected few UK universities have a history that goes back several centuries, 'and are amongst the oldest continuous social institutions in Britain, indeed in the Western World generally', it is interesting to note that 'even as late as 1963, the year that the Robbins Report was published, there were still only twenty-four universities' in

Britain. Taylor *et al*, citing Scott (1995), note that universities are a recent creation and that ‘the ancient pedigree of the universities is largely a myth’ (2002:73). The expansion of higher education has taken place in the last thirty to forty years and a series of education policy documents chronicle the reforms that have affected higher education. Significant events include the *Robbins Report* (1963), the *DES White Paper – Public Expenditure 1978-1980* (1976), the *Public Expenditure White Paper* (1981), the *CVCP Jarratt Report* (1985), the *Dearing Report* (1997) and, in 2003, the *White Paper – The Future of Higher Education*. Basically, Robbins legitimised the expansion of higher education; the Public Expenditure White Papers reduced the targets for university places and introduced cuts in university funding in real terms; Jarratt (1985) sought to introduce clear objectives for universities and achieve value for money as well as making recommendations on university policy and management (cited in Kogan and Hanney, 2000:117). The Future of Higher Education White Paper (2003) focused, primarily, on widening access, funding and support for foundation degrees and the establishment of Taught Degree Awarding Powers (TDAPs) for non-research based HEIs. This continues in the same vein as that of the Further and Higher Education Act 1992 when the polytechnics were allowed to include the word ‘university’ in their title providing they met the conditions applied to this reform.

Commenting on the direction of UK higher education policy in the 1980s and 1990s, Robertson (1997:75), concludes that this strand of education policy has ‘veered from one direction to another with little apparent consistency’. To support his view, Robertson cites the position in the

mid-1990s when, he suggests, the then conservative government found itself in a ‘moral panic’ in that expansion of the higher education sector, with greater access and openness, fell from being regarded as a virtue only twelve months previously to be seen as a threat to quality. Robertson accepts that whilst the ‘responsibility for these oscillations [in HE policy] must lie in the last resort with policy-makers, higher education has not done enough to secure a higher position in the political agenda for the sector’. Going further, Robertson (ibid:76) observes that at a time when universities face demands for more public accountability and a greater responsiveness to external factors, the higher education sector ‘turns inwards in search of intimacy and solace’. This position goes against the forces that exist for the modernisation of universities. There are opportunities, it is claimed, such as the development of strategic alliances with public or private sector organisations. Proponents of change argue that although this will involve some adjustment for HEIs, such strategies do not necessarily involve any compromise of ‘their central purpose’. Robertson is of the view that ‘the survival of the university in the form to which we have grown accustomed is no longer guaranteed’ and that ‘change and ally’ are necessary for the future prosperity of universities (ibid:77).

As previously discussed in chapter 1, the funding of higher education has undergone significant changes. It is suggested that traditional higher education funding, the ‘ancient and generous bargain between universities and the state’, ‘is being supplanted by an altogether more austere concordat’ involving greater public accountability and a reliance on ‘private cash’. This new arrangement, it is suggested, is ‘replacing

professional trust' (ibid:83). McDaniel (1996:5) notes the importance of the role of government in ensuring that HEIs, either the sector overall or individual institutions, successfully achieve the goals that society expects of them. Also, McDaniel suggests, governments 'are in fact held largely responsible for the development of higher education systems as a factor contributing to the economy, social development, science and technology, [and] an educated and critical population'. The greater the increase in the role of government in higher education systems will, perhaps inevitably, give rise to the claim that academic freedom is under threat. Fernando (1989), contributing to the World University Service debate on government influence of universities (the 'Declaration on Academic Freedom and Autonomy of Institutions of Higher Education') declares that 'during the past two decades, a tendency has loomed up in the sphere of higher education to undermine, restrict or suppress academic freedom and university autonomy' (cited in McDaniel, 1996:4). The issue of professionalism and autonomy will be addressed in greater detail in section 2.5 of this chapter. This should be considered in the context of an individual HEI's mission and goals.

With respect to the mission and goals of an organisation, in many cases, Wilson observes, they are determined by 'different and competing influences' (1995:3). These influences, Wilson suggests, are 'economic, financial, social and political'. These factors can affect the survival of an organisation. In this respect universities are a rarity in that 'the longevity of certain universities is almost unrivalled in the western world'. Post-92 universities in the UK do not share the benefits of reputation and investment that is enjoyed by traditional universities. As a consequence,

Wilson argues, these ‘new universities’ are vulnerable to influences that ‘may determine that their orientation or “niche” is no longer a desirable component of a national higher education framework’. Wilson, citing Trow (1984), suggests that in the same way that government has expanded and encouraged diversity in higher education provision, ‘policies could equally be developed that would subsequently restrict, restrain or direct institutions to adopt a less divergent, perhaps convergent set of characteristics’ (ibid:4). Coupled with ‘oscillating political policy and economic necessity’, these conditions provide a ‘chaos environment’ in which universities hope to survive. Van Vught (date omitted from citation), cited in Wilson (ibid), describes two ways in which government can influence the role and structure of universities; ‘the Control Model and the Framework Model’. The difference between the two interventions is more that of emphasis rather than substance. Basically, the Control Method is concerned with ‘highly centralised planning and regulation’, whilst the Framework Model influences in a more indirect way and ‘provides a degree of institutional freedom of action within a regulatory frame work’. The Framework Model can work best via ‘evolutionary change, “managed” through “non-political” buffer bodies’ that are government appointed. Wilson concludes that many universities operate within the Framework category. The government-directed buffer bodies on one hand, it is argued, delegate management responsibility to universities, yet in practice ‘constrains managerial decision-making within a set of limited options’ (ibid:4). Institutional freedom, it is argued, ‘implies an ability to define ones own profile, identity and mission’ (ibid:5). Whatever the right of self-governance higher education

institutions enjoy, the influence of government in future direction is powerful force that is difficult for an HEI to deny (ibid).

It would appear that higher education over the last twenty years in the UK has suffered from changes in direction of government education policy. Pressures to achieve widening participation have been tempered with concerns about resulting quality. Universities are accused of being inward looking and failing to promote higher education to a more elevated position in the political agenda. Higher education is experiencing greater public accountability and the traditional funding of universities is being replaced with new models of funding that direct HEIs towards, *inter alia*, mass higher education and making a contribution to the economy. Universities are vulnerable to these interventions and the task of university management is increasingly to make sense of the chaos environment in order to survive and, hopefully, prosper. Although significant, the influence of government is only one aspect of the chaos environment. Wilson suggests that ‘the “unknowable” intervention or opportunity remains a factor for consideration by executive management’ when scanning the chaos environment (ibid:11). Stacey (1993) describes organisations as comprising of ‘sets of nonlinear feedback loops’ and notes that such systems contain ‘both positive and negative loops’ (1993:216). The presence of positive and negative occurrences causes organisations to experience ‘a state that has characteristics of stability and instability’ (ibid). Successful organisations, Stacey reports, appear to position in that area which ‘borders between stability and instability’ and that this ‘border area’ is the subject of the theory of chaos (ibid). Wilson (1995) maintains that universities need to create a culture that is ‘capable

of continual change, delivering its commitments, yet sufficiently flexible to exploit its opportunities' (1995:14). In these circumstances, Wilson declares, a university would be able to 'thrive amidst chaos' (ibid).

The following section (2.1.1) examines the government's objectives in respect of the core HE themes that it funds.

Government Objectives

2.1.1 United Kingdom higher education is characterised, D'Andrea and Gosling (2002) suggest, 'by considerable diversity of mission, type and size of institution, level of specialism, wealth and status'. The problem with such a range of diversity is that 'generalisation about aims and goals is difficult, if not impossible'. There is a high degree of overlap of the core provision in higher education; teaching, research and *third stream* activities; however, 'different institutions place the emphasis in their missions in different places' (2002:169).

Before the 1990s higher education institutions received virtually all of their funding for two core areas, that is, teaching and research. As discussed in section 1.0 above, the 1990s have seen a 'rapid growth in additional discretionary funds for the development of industry links' (Institute of Education and Association of University Teachers, 2000:6). These government *third stream* initiatives should be considered in the context of globalisation, the impact of information technologies and, in the UK, the government's competitiveness agenda. Hicks *et al* (2000), in their paper Research Excellence and Patented Innovation, note the particularly strong link between science and innovation in the UK and the

role of the Office of Science and Technology (part of the then Department of Trade and Industry) (2000:317). The UK government's determination to use the funding of research in higher education to achieve its broader objectives is not unique. Clarke *et al* (1984) noted the external pressures on university research policies in the 1980s. They observed that there was 'a world trend for current public policy to shape the nature of university research activities'. This has resulted in 'the channelling of research grants money in directions congruent with government objectives' (1984:30).

The UK Higher Education White Paper (2003) sets out the government's proposal to 'expand on many existing measures to improve cross-sector linkages with higher education, including incentives for less research-intensive universities to develop links with local business' (Australian Vice-Chancellors' Committee, 2003:4). This focus on funding for less research-intensive universities, although welcomed by many academics, conflicts with the view of Hicks *et al* (2000), who conclude that the results of their research 'imply that governments that fund the best science have the best chance of reaping technological benefit' (2000:318). An important question to ask regarding the UK government's objectives is whether the government's priority is to achieve wide coverage of industry-university links or more spectacular research breakthroughs, via a more limited number of more prestigious institutions, with a corresponding payback.

Pavitt (2001) notes that both politicians and electorates are 'asking for convincing evidence about the benefits of publicly funded basic

research'. In Europe, Pavitt (2001) argues, particularly the United Kingdom, the public funding of research is subjected to more 'demand-side factors'. There appears to be movement towards an expectation that research proposals will have to 'identify possible practical as well as scientific benefits'. Increasingly, partial funding and a requirement for greater revenues from intellectual property will prevail (2001:768). Government, as well as the tax payer, has become 'more active as a consumer'. This is not merely an issue of accountability and, Smethurst (1992:140) suggests, 'the unhappy experience of government attempts to control nationalised industries by proxy led to increasingly complex centrally-determined decision rules'. The Thatcher led government during the 1980s saw privatisation as 'the key to promoting efficiency' of public assets. In higher education, there was a 'demand for clarity over funding mechanisms'. Some commentators believed that academic staff had been pursuing projects that would themselves 'attract further research funding'. Smethurst (1992) suggests that the requests for clarity in the funding mechanism 'fused naturally with this government strategy of promoting, if not real then at least emulatory, competition' (ibid:141). Many commentators took exception to the developments in education policy during this period and their views are adequately summed up by Scott (1992:10) who states that:

'The saddest consequence of higher education's most recent experience.... is the way in which institutions have been encouraged to regard themselves as businesses, corporations or whatever other example of degenerate Thatcherite language is preferred'.

There will be an opportunity to discover whether, to any extent, the view expounded by Scott is shared by academic staff at the institutions that are

the subject of this study. It is clear from a review of the literature that, in the UK, the objectives of the Government are shaping the agenda of higher education institutions in respect of research and innovation. The extent of this occurrence may be revealed in the interviews with the academics, and managers responsible for *third stream* activities, at the HEIs that are included in this study. It is worth noting, when accessing the success of policy initiatives, Levin's advice; that 'what is planned is not necessarily what is implemented, and what is implemented does not necessarily produce the intended results' (2001:194).

Future Prospects

2.1.2 There are a number of uncertainties as to how the future of UK higher education will evolve. Peter Scott (2001) maintains that 'the overarching question' that is facing higher education in the UK is 'whether the elite-mass system that has developed, raggedly and perhaps absent-mindedly, over the past two decades is capable of further extension and elaboration or whether it has reached the limits of its potential'. This question, Scott suggests, is the focus of other, more detailed questions regarding 'funding, structure and quality' (2001:200). Scott maintains that 'the scale and scope of future expansion is the key'. Further questions relate to the government's ongoing commitment to a 50% higher education participation rate by 2010; the introduction of two year vocationally focused foundation degrees; the growth of new providers such as 'spin-offs of traditional institutions, public-private alliances or corporate universities' (ibid:201). The pattern of funding in the future is uncertain as is the likely organisation of research in the future (ibid:202). Despite the significant uncertainties that he has identified, Scott remains

positive about the future prospects of UK higher education. He praises the attempt to increase social opportunities in higher education, ‘through a system that retains traditional academic attributes in nearly all institutions’ and concludes that ‘there is no compelling evidence to suggest that this success cannot be sustained’ (ibid:203).

Cameron (2003) takes a less rosy view about what the future of UK higher education holds. Cameron starts her 2003 paper by insisting that, in her twenty years of working in British universities, she ‘can’t remember a time when morale was lower than it is now’. Commenting on the 2003 White Paper, she declares that ‘the poisonous combination of under-resourcing and over-regulation is the background to the government’s recent White Paper on the future of higher education’ (2003:133). Cameron’s concern is that ‘the future of higher education will be a continuation and in some respects an intensification of the trends that have blighted the past’. Particular concerns expressed are inadequate resources (although a few institutions receive ‘even more resources’); ‘dubious centralised mechanisms for assessing research and teaching quality’; intrusive regulation and the production of ‘a cadre of business-style “professional” managers’. Cameron is particularly scornful of ‘utopian waffle about the global economy’ and dismisses perceived ‘economic success’ being due to higher level skills. The success of the UK economy, in Cameron’s view, ‘is not high skills but low wages and low taxes that make Britain more attractive to employers’ (ibid:134). Clearly, there are differing views about the future prospects of higher education in Britain. The implication here, of Cameron’s conclusion, is that the economic success of the United Kingdom depends more upon

low rates of pay and tax incentives rather than higher level skills and business-style management which is increasingly found in HEIs; particularly those involved in *third stream* activities. The impact of the future trends on the performance of academic staff are addressed in (2.5) and (2.6) below. The following section will explore the concept of academic capitalism which is central to *third stream* policy.

Academic Capitalism

2.2 Deem (2004) suggests that university academics who pursue funding from private organisations ‘using market-like behaviour’, but who are ‘technically public employees’, may begin to ‘distance themselves’ from a view that they are public sector employees. This is a symptom of academic capitalism which Deem defines as ‘a situation in which the academic staff of publicly funded universities operate in an increasingly competitive environment, deploying their academic capital, which may compromise teaching, research, consultancy skills or other applications of forms of academic knowledge’ (2004:295). Slaughter and Leslie (1997) note that while such university employees are employed by the public sector they ‘are increasingly autonomous from it’ (1997:9). Going further, Slaughter and Leslie suggest that these university employees ‘act as capitalists from within the public sector; they are state-subsidized entrepreneurs’ (ibid). Academic capitalism is described by Brown and Schubert (2000) as ‘the efforts of modern universities to make themselves as relevant as possible to the market regime for the sake of financial and reputational security’. This development has had a significant impact on ‘the culture and social organisation of universities’. The cultural effects of academic capitalism can be far ranging from

‘changes in notions of academic discovery’ to ‘views about the relative worthwhileness of curricula’; the organisational effects include ‘changes in the power and authority structure of the university’ (2000:135).

Although Brown and Schubert (ibid) focus upon the financial aspect of academic capitalism, Slaughter and Leslie (1997), reporting on their research findings, state that occasionally ‘additional benefits were derived from the commercial projects’ that respondents had been involved with’.

The most frequently cited additional benefits are:

- The general infusion of enthusiasm and research ethos into the department, university and individual staff members.
- The activities created a dynamic atmosphere with improved morale and a generally more favourable work environment.
- Revenues added importantly to university autonomy
- Building a research infrastructure that would not have otherwise existed.
- Additional faculty members and equipment.

The above positive aspects of academic capitalism are very persuasive, however, as could be expected, a number of negatives of academic capitalism were exposed. A common theme was the level of academic resources consumed by commercial projects. It is reported that ‘substantial university and department resources [were] not covered by the contracts’ (1997:127). Slaughter and Leslie (ibid) found in their research that ‘one in four respondents’ took the view that the cost was significant’. The negative responses reported were ‘almost always in

response to a specific problem or inconvenience encountered'. Physical space was the most significant problem; however, administrative time, photocopying and telephone costs were frequently cited' (ibid:128).

By following academic capitalism strategies, Slaughter and Leslie (ibid) argue, universities 'direct increasing amounts of faculty and administrative time towards activities other than instruction' (ibid:222). Despite the allocation of general resource for commercial activities, the benefits of academic capitalism to teaching and learning are not always made clear (ibid). The effect of such strategies, however, on the culture of universities is to 'increasingly integrate academic, commercial and bureaucratic cultures' (ibid). A consequence of this development, it is suggested, is a decrease in 'the distance between universities and business and industry, and between universities and government'. The danger is that, for universities, the 'implicit contract that grants faculty and universities a measure of autonomy in return for disinterested knowledge... may be undermined', with the loss of the 'special treatment' that universities have traditionally enjoyed (ibid:222). Deem (2004), citing Cohen *et al* (1999) and McAuley *et al* (2000), notes the 'changing patterns of resource dependency in universities' (2004:293). This, it is claimed, forces academics to undertake 'commissioned applied research for industry rather than doing "pure" research for government-funded research councils' (Deem, ibid). Williams (1992), commenting upon his research into government initiatives to stimulate external funding, reported the views of a professor who, in advising colleagues, feels that contact with industry should not 'be allowed to soak up all your energies' (1992:117). He also reports that other colleagues had greater

misgivings about the impact on basic research and that ‘there has been a tendency for universities to do less fundamental work in order to meet deadlines’ (ibid).

Fahey *et al* (2006) make a significant point when they identify a problem with the pursuit of knowledge economy policies, that is, ‘they leave out those knowledges deemed marginal to current economic growth’ (2006:287). Disciplines such as the arts and humanities are ‘a major absence’ and, as Fahey *et al* suggest, ‘they are regarded as incommensurable with the dominant techno-economic paradigm’ (ibid). There is an important question about the future funding of areas that are not seen as a priority on economic grounds. If funding continues to be channelled into science and technology areas, influenced by global pressures, what is the likelihood of the survival of academic areas not in demand by the global knowledge economy? (ibid).

The terms academic capitalism and entrepreneurial university often appear to be used interchangeably in the literature. Slaughter and Leslie (1997) were comfortable with employing *academic capitalism* in their research, in part, ‘because alternatives – *academic entrepreneurialism* or *entrepreneurial activity* – seemed to be euphemisms for *academic capitalism* which failed to capture fully the encroachment of the profit motive into the academy’ (1997:9). Deem (2004) suggests that ‘concepts of academic capitalism, entrepreneurial universities and new managerialism had something in common... problems which can be addressed using similar strategies’ (2004:299). Other commentators, principally Clark (1998a), state that the term entrepreneurial university

more appropriately reported their area of research and expertise. As far as this doctoral research is concerned, any fine points of distinction between the terms is of a lesser order of importance in this study than the relevance of these terms, and their individual characteristics, to *third stream* education policy considered in the field of study. Entrepreneurial universities are examined in more detail in the following section of this chapter.

Entrepreneurial Universities

2.3 Although the term *entrepreneurial universities* is widely associated with the work of Clark (1998a), Bercovitz and Feldman (2006:175) inform us that Etzkowitz (1983) ‘coined the phrase entrepreneurial universities to describe the series of changes that reflect the more active role universities have taken in promoting direct and active transfer of academic research’. The reference is to Etzkowitz’s 1983 paper; ‘*Entrepreneurial Scientists and Entrepreneurial Universities in American Academic Science*’. Financial pressures and changing political views since the late 1980s in the UK have caused universities and colleges to respond to the rapid growth in ‘a third core of business’. This third core (*third stream*), involves HEIs in, as described in section 2.0 of this thesis, customer specified services including paid research and consultancy. The reason given by Soares and Amaral (1999) for the need of universities to embrace entrepreneurialism is that they ‘were suddenly faced with very short budgets, demands for efficiency from governments, and from society, criticism for not being able to meet immediate social demands’ (1999:15). It was noted that survival, in many cases, was the reason that universities ‘were required to increase and diversify their

sources of income' (ibid). Soares and Amaral argue that the low level of higher education funding 'was and still is a very powerful driving force for change' (ibid). Universities that were previously regarded as having a 'proactive attitude' are today referred to as having an 'entrepreneurial attitude'. Also, there is strong support for the notion that entrepreneurialism in higher education may be 'the result of a reaction to adverse conditions created by the environment' (ibid).

In the future, Schulte (2004) argues, 'universities must increase their contributions to the development of society and of their region' (2004:191) and he suggests that 'universities are the future workshops of society' (ibid). The knowledge derived from research should be used for the wider benefit of society (ibid). Zaharia and Gibert (2005) suggest that universities face 'a new and major challenge' from 'the knowledge-based society and economy' (2005:31). The pressure comes from the necessity for growth in the knowledge-based society which 'depends on the production of new knowledge' (ibid). This 'new knowledge', Zaharia and Gibert suggest, should be transmitted via education and new communication technologies; as well as ensuring its 'utilisation in new industrial processes or services' (ibid). There are 'three principal mechanisms by which knowledge and expertise can be directly transmitted to industry', Zaharia and Gibert suggest; 'intellectual property rights, campus-type enterprises, and [business] start-ups' (ibid:36). This area of a higher education institution's work is seen as a benefit to the economy and the wider community and has resulted in the introduction of the concept of 'the entrepreneurial university' (Institute of Education and Association of University Teachers, 2000:4). The

IoE/AUT report notes that the inclusion of *third core/stream* into the mainstream of university life is a concern to academic staff in universities. There are many questions being asked; ‘to what extent is participation and proficiency in economy related work a criterion in academic appointments and promotion?... does it complement or conflict with traditional mainstream work of research and teaching?’ (IoE/AUT, 2004:4). Other concerns relate to the likely impact on workloads and whether academic staff are ‘doing inappropriate work’ (ibid) for short-term financial gains and viability reasons. A fundamental question is to what extent is this ‘new entrepreneurialism’ (ibid) changing the role of universities in UK society (2000:4). Etzkowitz *et al* (2000) state that there is empirical evidence that the commercialisation of intellectual property has become an institutional objective in several institutions and they argue that ‘the university appears to be arriving at a common entrepreneurial format in the late 20th century’ (2003:313). MIT and Stanford in the USA, which had been seen as ‘anomalies within the US system’, have become models for other universities to emulate (ibid:318).

The debate about entrepreneurial universities usually invites polar positions. Clark (1998b:13) takes the view that entrepreneurially focused universities have ‘a better chance to control their own destinies’. Clark argues that there is an increasing ‘imbalance in the environment-university relationship’ (ibid:14) and that universities are caught up in ‘grand contradictions’ (ibid). These contradictions revolve around resource pressures, that is, how to do ever more with an increasing number of stakeholders who make contradictory demands. Clark is of the view that the ‘entrepreneurial response offers a formula for institutional

development' (ibid). By following this formula, it is suggested that universities can achieve more diversified funding and reduce the dependency on government. This situation, Clark suggests, offers universities 'autonomy on a self-defined basis' (ibid). In order to be an entrepreneurial university it is necessary for the institution to 'take on an entrepreneurial outlook' (ibid). This involves the institution in evolving 'a set of overarching beliefs that guide and rationalise the structural changes that provide a stronger response capability' (ibid). By adopting an entrepreneurial response, Clark argues, universities will have the means to 'redefine their reach' (ibid) and resolve the problem of the environment-university imbalance. Universities can then offer a greater distinctiveness to the society that it serves (ibid).

In one of his more recent publications, Clark (2004) himself accepts that the uptake of entrepreneurialism in universities has some way to go and he declares that 'it seems likely that a large number of universities, even a majority, will not venture very far down the entrepreneurial road' (2004:173). This situation, Clark argues, makes the feat of those who have overcome the fear of failure and achieving the transformation to an entrepreneurial organisation all the more impressive (ibid). In order for the transformation to an entrepreneurial university to take place the institution must 'acquire the right kind of organization' (ibid:174). To be entrepreneurial, the university needs 'to go on changing itself and adapting effectively to a changing society, one that allows its groups and individuals to become more effective than previously' (ibid). It is important to note, Clark suggests, that institutions 'freely carve out their own solutions' and that due to the complexity of universities, such reform

requires ‘complex differentiated solutions’ (ibid:183). Clark argues that ‘one hundred universities require 100 solutions’ (ibid).

The use of case study method such as that employed by Clarke (1998a), and also by Shattock in 2003 (see page 73 of this section of thesis), can offer strengths as well as having its limitations (Merriam, 1988:32). The strengths of adopting a case study approach include selecting ‘a case study design because of the nature of the research problem and the questions being asked’; the case study approach may offer ‘the best plan for answering one’s [research] questions’. Also, ‘the case study offers a means of investigating complex social units consisting of multiple variables’. This approach can generate answers that will provide an insight into the phenomenon (ibid). Merriam suggests that these strengths make case study design attractive when the area of focus, such as education, is an applied field of study and may lead to an improvement in practice (ibid). With respect to the limitations of case study, Merriam (1988), citing Riley (1963), states that this qualitative method is limited ‘by the sensitivity and integrity of the investigator’ (ibid:35). Also, Guba and Lincoln (1981), cited in Merriam (1988), note that ‘case studies can oversimplify or exaggerate a situation, leading the reader to erroneous conclusions about the actual state of affairs’ (1988:33). Guba and Lincoln point to a danger with case studies in that the impression can be given that a case study is an account ‘of the whole... when in fact they are a but a part – a slice of life’ (ibid). In addition to the important issues of reliability and validity, generalisation is identified as a potential limitation (ibid:34).

The issue of generalisation is one of a number of criticisms of Clark's 1998a study, *Creating Entrepreneurial Universities*, that are discussed in the remaining part of this section (2.3) of this thesis (Marginson and Considine, 2000; Deem, 1998 and 2001; Smith, 1999). It is worth noting at this point that, in a discussion of his 1998a study, Clark (2004) declares that 'I focused very little on so-called theory and very much on practice' (2004:2). The selection of the 'handful [five] of universities in Europe' that Clark (1998a) made was following his canvassing of European colleagues for suitable candidate universities. The criteria that Clark applied to candidate institutions were that for a decade they should have made a 'valiant effort... to become more enterprising, even aggressively entrepreneurial' (1998a:xiv). Clark defines enterprising universities as 'places that actively seek to move away from close governmental regulation and sector standardization' (ibid). Despite having criteria for the selection of suitable universities for participation in his study, Clark declares that 'under limitations of time, energy, and research budget, five cases in such varied national settings [England, Scotland, The Netherlands, Sweden and Finland] were deemed sufficient' (ibid). Five host institutions may well be sufficient for a study such as Clark's that employs a case study approach, however, if the intention was to generalise from the results of the study then it would have been desirable to test the findings more widely by means of a research methodology that includes quantitative methods.

Marginson and Considine (2000), citing Clark (1998a) refer to the highly entrepreneurial, 'even aggressively entrepreneurial', nature of the universities in Clark's (1998a) study. The five common elements that

enabled each of the host institutions in Clark's (1998a) study to transform themselves are as follows:

- *A strengthening steering core*; reconciles new managerial values with traditional academic values; academic leaders become managers; greater flexibility in the face of expanding and changing demands
- *The expanded developmental periphery*; research centre that are outward-reaching and created and dissolved as required; professional operations providing services such as knowledge transfer, intellectual property and relations with industry
- *The diversified funding base*; to compensate for declining government funding and to increase institutional autonomy via the augmentation of research grants, contracts and other commercial sources such as royalties
- *The stimulated academic heartland*; recognising the importance of the traditional academic areas in completing the necessary work; each faculty needs to become an entrepreneurial unit with both internal and external connections avoiding a split between managerial staff and academics
- *The integrated entrepreneurial culture*; developing a work culture that embraces change; cultivating an institutional identity and distinctive reputation which is marked by both statements and daily practices

(Marginson and Considine, 2000:239)

Marginson and Considine (2000) identify several limitations of the entrepreneurial model including the detachment of leaders from those whom they lead; the enterprise university ‘works around and against cultures rather than through them; senior management will ‘naturally tend to fall back on generic management tools and mimic-models of the ideal university’ (2000:241) and, finally, there is a concern that an enterprise culture will narrow the capacity for ‘organisational innovation’ which can contribute to ‘a crisis of purpose’ in individual institutions (ibid). It is suggested by Kirby (2006) that ‘universities are not the most entrepreneurial of institutions’ as, unlike many similar sized private sector companies, they have not needed to be entrepreneurial and they do not have a history of being enterprising (2006:599). The fear of many university staff, Kirby, quoting Williams (2002), reports, is that moving to an entrepreneurial model ‘will drive out their other more fundamental university qualities, such as intellectual integrity, critical inquiry and commitment to learning and understanding’ (ibid). Kirby lists several barriers to entrepreneurial development:

- The impersonal nature of relationships
- The hierarchical structure and many levels of approval
- The need for control and the resultant adherence to rules and procedures
- The conservatism of the corporate culture
- The time dimension and the need for immediate results
- The lack of entrepreneurial talent
- Inappropriate compensation methods

It is clear that these barriers will be a formidable challenge to any higher education institution seeking a more entrepreneurial focus. Any one of the barriers could be expected to take a sustained effort, over a considerable period of time, in order to resolve. Kirby asserts that ‘most academics see their roles as teachers and researchers and not as entrepreneurs’. He also points out that many university managers are concerned that if ‘leading academics become involved in entrepreneurial activity’ this may have a negative consequence for the university’s research performance (ibid).

There are other alternative views to Clark’s (1998a) enthusiasm for the activities of entrepreneurial universities. Warner and Leonard (1997:3) list the most common arguments by academic staff against income generation activities. They call these arguments *The Four Negatives of income generation* [‘income generation’ was the precursor to ‘entrepreneurship’ in higher education]:

‘(i) we cannot undertake income generation because there are no opportunities, (ii) terms and conditions inhibit it [income generation], (iii) we do not want to undertake income generation because it is not very nice or because we do not have the skills to do it and, (iv) we should not be undertaking income generation because it is not what education is about’ (Warner and Leonard, 1997:3).

These negatives are consistent with the difficulties that Kirby (2006) identified above. There is no mistaking the apprehension, as stated in the literature, that many academic staff have regarding *third stream* activities. Deem (1998), cited by Finlay (2004), has been critical of Clark’s (1998a) study of entrepreneurial universities and she was particularly concerned

that Clark's case studies 'appear to rely heavily on interviews with a number of... senior manager-academics and administrators... and hence provide a rather one-dimensional picture of the institutions concerned' (2004:417). In her article for *Comparative Education*, Deem (2001) complains that 'the overall message of Clark's (1998a) book is presented with missionary zeal' (2001:16) and it is suggested, with reference to data on global pressures and other interaction factors, that the study 'is actually rather less extensive and less impressive' (ibid). A further concern that Deem (2001) has of Clark's (1998a) book is the validity of making generalisation of findings from qualitative research and argues that the study 'does not seem to have heeded many of the conventions about case-study or qualitative research in general' (ibid:17). Smith (1999), in a review of Clark's (1998a) book for Higher Education, takes a similar critical line to Deem (2001) and states that 'if entrepreneurship is the core concept of the book, it is rarely explored as problematic' (1999:374). Also, Smith complains that although Clark (1998a) makes a useful contribution to the 'debate on the future shape of universities' (ibid), key questions are missing from the study with regard to 'the actual processes, compromises and contradictions of becoming entrepreneurial':

- (i) How do you build the skills and knowledge necessary in promoting an entrepreneurial culture?
 - (ii) What competencies are involved?
 - (iii) Can academics be entrepreneurial yet controlled?
 - (iv) What spans of corporate and disciplinary controls are required?
 - (v) What is an appropriate balance between control and freedom?
- (Smith, ibid)

Smith's (1999) opinion of Clark's (1998a) study is that experience suggests that the host universities in Clark's (1998a) research are not unique and 'that trawl the inside' and similar results could be obtained from 'many other universities' claiming success of achievement in transformation, innovation and entrepreneurship (ibid). If academics need new or different skills in order to contribute and succeed in this era of entrepreneurialism, then it should follow that management in HE should also reflect this change. Chaston (1994), commenting on the management of new UK universities, notes that these institutions have not adopted the practice of successful private sector companies in delegating authority and responsibility to those in the organisation who are 'closest to the customer' (1994:72). Going further, Chaston (ibid) states that, 'at both senior management and faculty level there is recognition of significant weaknesses in key [skills] areas' (ibid).

Two decades ago Clarke *et al* (1984) observed that the 'fundamental role of universities' has not changed over the centuries and remains 'to preserve, transmit and extend knowledge' (1984:26). However, even in the 1980s, Clarke *et al* suggest that university functions 'have been modified' due to the way an institution relates to 'the particular community and the wider society in which it operates' (ibid). It was during this time, in the mid to late 1980s, that mass higher education was mobilised and income generation, the forerunner to entrepreneurial universities, began to take off. To achieve success as an entrepreneurial university in the current decade, Shattock (2003) suggests, that 'academic staff of high quality are required' (2003:156). Academic success is seen as a critical factor and 'being entrepreneurial means first, being

entrepreneurial in academic matters not in finance; financial success follows academic success, and reinforces it, but cannot create it' (ibid). Shattock believes that 'second or third tier institutions' show little sign of flourishing as an entrepreneurial university. Entrepreneurial universities, Shattock states, 'are not necessarily comfortable institutions to work in but their vigour and dynamism maintains high morale' (ibid). This is compared favourably with, what Shattock calls, 'the defensive, over administered and over controlled approach to university management to be found in some contemporary higher education institutions' (2003:156). Shattock (2003), like Clark (1998a), takes a case study approach in this study and he uses Clark's case study of Warwick University (Shattock's own university) as a basis for comparison of the four university cases in his own study (ibid:146). Deem's (2001) comments questioning the validity of generalisation from Clark's (1998a) study may also apply to Shattock's study (2001:17). As discussed in page 67 of this chapter of the thesis, having five case studies of individual HEIs in a study may be adequate for qualitative research, however, further quantitative research should be considered before generalisation can safely take place.

In the following section (2.4) there is an examination of the literature on technology transfer. Whilst the term entrepreneurial university, favoured by Clark (1998a) (1998b), has a restricted application and is less readily used by universities to describe their ethos and culture, most UK universities do acknowledge technology transfer as a significant element of their provision (Lambert Review, 2003).

Technology Transfer

2.4 Technology transfer is a major component of *third stream* activities in higher education and is central to the concept of entrepreneurial universities discussed in 2.3 above. Whilst academic capitalism is concerned with universities competing for ‘critical resources’ by engaging in ‘market and marketlike behaviour’ (Slaughter and Leslie, 1997:114) and entrepreneurial universities are focused upon ‘institutional self reliance... (and) more active autonomy’ (Clark, 2004:7); Slaughter and Leslie (1997) offer a simple definition of technology with a commercial slant; ‘technology transfer is the movement of products and processes from the university to the market’ (1997:139). Bremer (1999), cited in Carlsson and Fridh 2000:1, defines technology transfer in a similar way as ‘the transfer of the results of research from universities to the commercial sector’. A variation of this, from the USA, is that federal technology transfer is defined as ‘the process by which existing knowledge, facilities or capabilities developed under federal R&D are utilized to fulfil public or private domestic needs’ (Rood, 2000:8). In the US, government laboratories work in partnership with universities as well as companies. There are a variety of schemes available for collaboration from CRADAs (cooperative research and development agreements) to the STTR programme (small business technology transfer) (ibid:10). The dissemination or transfer of technology can occur in a variety of ways including the publication of research results or by the commercialisation of intellectual property (Carlsson and Fridh, 2000:1).

In their research, Slaughter and Leslie (1997) ask a series of questions, separately, to ‘central administrators, departmental heads, [and] faculty at various ranks’ (1997:139). Interestingly, postgraduate students were also involved in this process. The questions related to resource dependence, organisational strategies and forms, and how do non-management academics ‘respond to unit involvement in technology transfer’ (ibid). Although a predominately qualitative analysis was adopted by Slaughter and Leslie (ibid) involving the extraction of data from several cases in the study, they state that ‘some interview data were quantified and used in cost-benefit taxonomies’ (ibid:16). The conclusions that Slaughter and Leslie (citing Brint, 1994) report are that technology transfer centres in universities are more likely to succeed if they ‘apply scientific knowledge to practical problems of production’ (ibid:175). This includes a range of scientific and technological areas such as biotechnology, engineering, computer science and production related medical scientists. Brint (1994) was quoted as saying that, in his research, the applied science centres had ‘rigorous and demanding technical cultures’ and that the products and processes under development offered high ‘profit potential’ (Slaughter and Leslie, 1997:175). It is noted that university technology transfer centres have a choice between ‘government services’ and the ‘private sector market’ (ibid:176). Whilst in the government services sector ‘the market opportunities for faculty... are reduced’, the opportunities for faculty ‘in fields close to the private sector market... may increase greatly’ (ibid). The success of a commercial facing centre in a university, Slaughter and Leslie argue, provides a significant problem in that academic staff who are not involved in commercial projects may have to

‘bear the burden of undergraduate teaching’ and other duties such as committee work (ibid:177).

Florax (1992) uses the term ‘knowledge effects’ (1992:182) in reference to ‘the impacts of the universities’ (ibid) production of knowledge on various economic indicators’ (1992:182). Florax (1992) argues that these impacts ‘result not only from university research as such, but also from the accumulation of human capital or the effects related to the university’s services to the community’(1992:183). Whilst basic research ‘results in original contributions to the advancement of science... universities may also perform applied research in which scientific knowledge is guaranteed in order to arrive at product and/or process innovations’ (ibid). The relationship between higher education institutions and the private sector are strategically important. Florax suggests that ‘applied research is to a large extent determined by basic research’ and that ‘universities and private firms are likely to co-operate closely because the former are engaged in basic research and the later in applied research’ (ibid:203). This last point is very pertinent for this doctoral research; if the strength of private firms is seen to be applied research, why is the UK government encouraging new, post-92, universities to channel efforts into applied research when the proposition is that higher education strength lay with basic research? Surely, logic would suggest, that more basic research, with all the opportunities that it offers for scientific discovery, should be the focus for all universities? Applied research would then be a spin-off (all be it potentially ‘profitable’) that provides the basis for university-industry collaboration. Pavitt (2001) argues the case for government funding for basic research

on economic grounds; firstly, it is suggested, there are benefits of basic research such as ‘reduced search costs and unexpected applications’; secondly, ‘multiple potential applications and new combinations’ would less likely be ‘fully explored or exploited’ if private firms operated in secrecy for their own benefit (2001:763). Academic researchers, Renault (2006) observes, ‘are making key decisions that affect the outcome of the technology transfer process and have an impact on regional economic development’. Significant areas for decision-making that are identified by Renault include:

- (i) What industrial collaboration to seek;
- (ii) Whether or not to disclose their discoveries and whether or not to patent them;
- (iii) Whether or not to spin off a company.

Renault suggests that a better understanding of the influences surrounding these decisions would, she expects, improve technology transfer ‘which would, in turn, increase the universities’ regional economic impact’ (2006:227). It would seem logical then that academic researchers should be seen by university management as an integral part of the decision-making team along side the managers that are responsible for commercial projects.

There are a number of benefits to academic institutions from involvement in technology transfer. Significant benefits include additional source of funding for research, a mechanism to transfer important research outcomes to the public and as a marketing tool to staff and students (Carlsson and Fridh, 2000:3). Stephan (2001:199), likewise, recognises

that there are benefits for HEIs in becoming involved in technology transfer. Updating the curriculum and financial returns are two examples. However, Stephan (2001) notes a number of negative implications of technology transfer for education; firstly, ‘there is the potential for technology transfer to divert faculty from students and curriculum’ (ibid:200), secondly, ‘technology transfer affects faculty members’ propensity to withhold information from colleagues (ibid:201) and, finally, ‘technology transfer can change the nature of the relationship between faculty and students’ (ibid:202). Osman (2000), cited in Stephan (2001), suggests that, due to the money involved in successful inventions, the relationship of trust between students and staff has changed. An example is given of the case of Joany Chou at Chicago University in 1998 where ‘her main accomplishment in 14 years of research on herpes virus – the discovery of a new gene – had without her knowledge been included in a patent by her mentor’. This questionable act was only discovered by chance when Chou was shown the patent award at a job interview. Court action followed when Chou pursued her former professor; the company that had the patent rights (cofounded by the professor); the University of Chicago and the University’s patent agency. The case was dismissed by a Federal Court’ in 2000 ‘on the grounds that Chou lacked “standing”, being an employee of the University of Chicago when the discovery was made’. Stephan (2001) argues that this ‘controversy provides a clear example of the tension that arises between mentor and mentee as a result of the technology transfer process’ (ibid:202). Although this is only one case, it does pose a number of questions regarding the potentially divisive nature of commercialism in the workings of universities; the professional integrity of academic

scientists and managers involved in technology transfer and the universities' policies and procedures in respect of profit-making commercial projects. Critics of applied research for commercial gain may see this as an appalling example of bad practice whilst supporters of technology transfer may take the view that the University policies merely need tightening or, possibly, better policing of their application.

The wider benefits of technology transfer, such as a more competitive economy, are also questionable. Contrary to the intention of many governments in Europe, Luukkonen (1998) concludes that there is 'no direct evidence that the EU research and technology programmes would advance the competitiveness of European industries' (1998:608). A report prepared by Simm *et al* (2000) on behalf of the Coalition of Modern Universities (CMU) in the United Kingdom exploring relationships between post-92 universities and Small and Medium Enterprises (SMEs) states that SMEs 'are regarded as key to the future development of a knowledge-based economy in the economy in the UK and the role of higher education institutions is critical in boosting economic competitiveness' (2000:34). This report was based upon a survey of 500 SMEs in the localities of five new (modern) universities participating in this study. An important element of the study was to 'map the extent of interaction between SMEs and their local universities'. Although it is dangerous to generalise from a study such as this, it is useful to examine the findings with regard to knowledge and technology transfer in these localities. In this component of the survey, it was found that '15% of SMEs had benefited' from engaging in knowledge and technology transfer activities with universities. Also, it is reported that '5% (of the

SMEs with links to universities) were related to technological innovation, which compares well with the DTI national survey (1998) figure of 4%’ (ibid:8). However, Simm *et al*, (2000) citing a DTI study (1998), suggest that ‘around half of the SMEs within the survey were innovators’. This, in national terms, as the authors of the CMU report state, ‘suggests the existence of a substantial gap between the number of companies engaging in innovation’ and those taking advantage of the expertise available at their local university (2000:25). A significant fact reported in this study is that SME-university links ‘were often the result of individual academics forging relationships’ (ibid:8). Section (2.5) below, following a review of the literature, considers alternative views on professionalism, academic autonomy and new managerialism. The significance of section (2.5) of the thesis is that it provides a context of the changing roles of academics and university management. This, it is intended, will provide an understanding of the climate within HEIs as the Government pursues its *third stream* policy.

Professionalism, Academic Autonomy and New Managerialism

2.5 ‘Is university teaching a truly professional activity?’; this question, posed by Randall (2000), has been considered by both those who work within the university sector and those who do not. Randall believes that, for those in higher education ‘the answer is self-evidently “yes”; whilst to many outside.... the answer is equally self-evidently, “no”’ (2000:154). The latter, perhaps, negative view was no doubt shared by Robert Jackson who in 1987, when parliamentary under-secretary of state, stated that he ‘regarded universities as cartels of producer interests. He suggested that

the university culture.... should no longer be allowed to obstruct the strategic design of Britain's economic revival' (Kedourie, 1989, cited in Milliken, 2004:13).

Academic staff are not generally agreeable to any external pressure regarding 'quality control and accountability measures'. The general view is that only academics can 'legitimately judge the worth of profession-specific actions'. Academics feel comfortable with collegiality and regard governance and regulation a matter for the profession itself rather than others, 'no matter how direct their interest in the result' (O'Neill and Meek, 1994:99). A fundamental question that these commentators ask is whether it makes 'any sense to talk of an academic profession?' The argument is that individual academics have an allegiance to their subject area rather than to some notion of 'a unified concept amongst academics'. Light (1974), cited in O'Neill and Meek, goes so far as to suggest that 'the "academic profession" does not exist. In the world of scholarship, the activities... centre on each discipline' (ibid:99). Professionalisation, Hoyle (1982) claims, is 'the process whereby an occupation increasingly meets the criteria attributed to a profession'. The criteria are likely to include a certain degree of skill 'based on a systematic body of knowledge' and an appropriate programme of training. Autonomy and a code of conduct or ethics, it is suggested, might also be a requirement (1982:161). Seddon (1997), commenting on a paper by Wilensky (1964), that 'positional power was seen to be maintained through professions' control of training, admission to practice and regulation of standards' (1997:2021).

Kennerley (1992:167) states that there are three types of professional groups. Random groups are where individuals 'subscribe to a common set of values'. In this instance the aim is to protect professional independence and freedom. There is no 'superordinate corporate goal'. Kennerley's second grouping is clustered groups. In this case, the individual belongs to 'an organisation which serves a number of different purposes'. There can be a tension between the aims of the individual and the organisation. A university academic department could fall into this category. The final grouping, managed professionals, occurs when the groups require 'major support services'. Staff at higher education institutions will certainly fall into this category. Kennerley (1992) suggests that academics are 'amongst the most difficult of professional groups to manage'. The benefits of support services, such as finance or technical support are not always appreciated by academic staff and, in some cases, 'are seen as distractions and irritations brought about by the organisation' (ibid:169). Larson (1990) cited in Seddon (1997), 'makes clear that professionalism is a linkage between knowledge and expertise, and status and reward'. It is essential for professions that the knowledge that they have 'can be justified as worthy of reward and traded for sufficient economic resources to ensure professional viability' (1997:2024).

It is important to explore the role of management in this debate. The function of management is to interpret the external environment and seek opportunities 'to extend the goals of the profession'. Ideally, the manager will form a vision for the organisation 'together with the professionals, a vision to which all staff subscribe to'. This is not a familiar occurrence in many organisations and requires mutual respect as well as trust and

confidence between managers and professional groups (ibid:172). Building respect and trust is not easy and there is much work to do in the higher education sector. This is demonstrated by Gottfredson's (1996) report on academic freedom that academic staff in HEIs 'have tried to protect themselves from a whole class of such improper influences, namely, political interference from their own institutions' (1996:205). Mitchell argues that any 'debate on where the dividing line between institutional autonomy and a personal right to academic freedom should be drawn is a pointless exercise' (1998:220). There is, it would appear, much work to be done if HEIs are to create an environment where mutual respect and trust are common place between professional groups and the institution's management team.

There have been a number of changes to the conditions of university teachers brought about by factors such as 'changing patterns of student intake and of curriculum and pedagogy'. Due to these changes, Nixon (1996) argues, the occupation 'no longer offers autonomy and status' (1996:7). The immense changes affecting HEIs have resulted in the 'fragmentation of the academic work place'. The role and professional identity of academics has been profoundly affected (ibid:14). This has, not unsurprisingly, caused great concern amongst many academic staff. Halsey (1992), cited in Roberts (1993:557), explains that there is a general discontent and that the expansion of higher education is at the centre of the problem. It is generally accepted that a significant reason for income generation, a forerunner to *third stream* activities, is to fund the expansion of HE.

It could be argued that the expansion of higher education is more desirable than preserving academic autonomy, however, in order to maintain, or regain, autonomy what would have to happen? What criteria can be applied? Ashby (1966), cited in Berdahl (1990:172), describes ‘the essential ingredients’ that are necessary to safeguard the autonomy of academics. These are given as:

- (i) Freedom to select staff and students and to determine the conditions under which they remain in the university.
- (ii) Freedom to determine curriculum content and degree standards.
- (iii) Freedom to allocate funds (within the amounts available) across different categories of expenditure.

An important distinction to make is ‘between being autonomous to a relatively high degree and being self-determining to a relatively high degree’. Self-determination, Haydon (1983) suggests, is when an individual has a right to ‘make and carry through certain sorts of decisions for oneself’. Autonomy, by comparison, is when the individual has the ‘right to be autonomous’ and when ‘others [do] not interfere with the development and maintenance of autonomy in persons, and perhaps positively to aid it’ (1983:220). Haydon concludes that ‘we can envisage a person being autonomous without being self-determining’ (ibid).

Russell (1994:337), responding to discussions around his book *Academic Freedom*, refers to ‘creeping managerialism’ when commenting on the introduction of a new system of teaching assessment. Similarly, Halsey (1992), cited in Nixon, 1996, states that ‘managerialism gradually comes to dominate collegiate cooperation in the organisation of both teaching

and research'. Halsey (1992) bemoans, what he describes in his book *The Decline of the Donnish Dominion*, as the transformation of university teachers 'into a new proletariat whose relative class and status advantages are being eroded' (1996:8). Reed and Deem (2002:126) define 'new managerialism' as a multi-faceted phenomenon drawing on practices and discourses from the private for-profit sector'. Citing Trow (1993), Reed and Deem suggest that 'management discourses and practices appear to have an increasing presence in UK universities and elsewhere'. A further, more expanded, explanation of new managerialism by Deem (2001) can be found in Tight (2004:291):

'The concept refers both to ideologies about the application of techniques, values and practices derived from the private sector of the economy to the management of organisations concerned with the provision of public services, and to the actual use of those techniques and practices in publicly funded organisations' (citing Clarke *et al*, 1994; Ferlie *et al*, 1996; Clarke and Newman, 1997; Exworthy and Halford, 1999; Reed, 1999; Whitehead and Moodley, 1999).

Slaughter (1994) warns university management that if they ignore the 'professional values' of academic staff in the 'governance process' then they will 'deny themselves the best available advice and council' (1994:59). The danger, therefore, of new managerialism is that it fails to integrate 'grass-roots academic cultures seamlessly into a larger plan', [and] managerialism often finds itself at one end of a polarity' (Marginson and Considine, 2000:64). Recognising the friction that can occur between management and academics, Marginson and Considine (2000) suggest that 'the fault-line.... falls somewhere between faculty

dean and individual staff member'. They also point out the difficulty that heads of department face in often experiencing divided loyalties. There is a paradox, Ball (2007:40) suggests, in the "new" forms of employee involvement; an integral element of new managerialism. 'On the one hand, they represent a move away from Taylorist, "low trust" methods of employee control [where] managerial responsibilities are delegated and initiative and problem solving are highly valued'. Alternatively, Ball (ibid) notes that 'on the other hand new forms of surveillance and self-monitoring are put in place'. This is manifested in 'appraisal systems, target-setting, and output comparisons' as examples of competence and performance based regulation. Du Gay (1996), cited by Ball (ibid), refers to this paradox as 'controlled de-control'. It is evident that new managerialism, where it is practiced, represents a considerable shift from the culture experienced in those institutions that remain committed to collegiality. The specific impact of *third stream* policy on culture is outlined below.

Impact of Third Stream Policy on University Culture

2.6 The transformation from traditional higher education institution to entrepreneurial university is not necessarily a smooth path. Ormerod (1996:4) states that 'at the root of the problem of mixing consultancy with academic work is a difference of culture'. A major factor is the tension that is created by the 'pull of opposing force', that is, the theoretical dimension versus the practical considerations of more vocational goals. The implications are that 'the norms of one subculture are constantly being played out against those of another'. This situation will frequently result in conflict (Harman, 1989, cited in Ormerod,

1996:4). In order to move to a more entrepreneurial culture there is a need to gather 'organisational ideas and beliefs and relate them to structures that support processes of change' (Clark, 1998b:12). These ideas and beliefs form into 'values, norms, customs and practice (ways of behaving) which influence the way work is arranged and formed' (Bargh *et al*, 2000:24).

The leadership dimension of these processes cannot be ignored. The change to a more entrepreneurial culture assumes that 'the dull but worthy "administrator" who supported the professional becomes the dynamic leader-manager who directs and inspires other professionals'. New structures and culture has resulted in greater managerial power and centralisation. The problem for academics in such structures are that university dons are being treated 'like employees rather than gentlemen-scholars' (Parker and Jary, 1995:324). This "problem" would be compounded if, as Everett and Entekin (1994) suggest, that 'academic staff see little opportunity for advancement at their institution' (1994:225). The growth in size of institutions is also a factor as 'larger institutions require different styles of management'. Many British universities have struggled to come to terms with the transition from a 'collegial' to 'managerial' style of governance (Scott, 1993:20). The increased complexity of larger, more entrepreneurial institutions, with a 'reliance on self-funding commercial activities', make it difficult for 'any one individual to carry out this increasing range of activities effectively' (Parker, 1994:61).

University staff that are attracted by the financial rewards of *third stream* activities such as consultancy should recognise that the ‘required motivation, behaviour and ethics are quite different from those required of a researcher’ (Ormerod, 1996:9). The prospects for academics to succeed as management consultants, Ormerod (1996) suggests, can only occur if the ‘ingrained research attitudes and practices’ can be put to one side. In this event, Ormerod argues, teaching can be enriched and earnings enhanced’ (ibid:10). Universities are much more dependent on other sources of funding (which can now be classified as *third stream*) such as, in addition to consultancy, ‘joint or contracted research, competitive bidding and various entrepreneurial activities’ (Mahony, 1994:75). In order for *third stream* activities to flourish, HEIs require suitably qualified and experienced staff. In a similar way that ‘elite’ groups of active researchers are formed in many universities, specialist technology transfer units may also be established. The danger of creating an elite unit or group is that if they enjoy benefits such as ‘fast tracking’ or ‘general career advancement’, then this ‘is clearly not conducive to collegiate harmony’ (Baimbridge, 1996:11). The UK, in particular, has experienced a movement towards a position where university priorities are determined by government and ‘certain perceptions of the market’. The results of this phenomenon are that there has been an ‘insistence on efficiency and managerialism in place of collegial and hierarchical governance (Becher and Kogan, 1992, cited in Mahony, 1994:75).

The impact of *third stream* policy on higher education institutions should not be considered solely in terms of internal issues. A key aspect of *third stream* activities is the relationship with external partners. For technology

transfer to occur successfully it is necessary to develop a strong relationship with industrial partners. The degree of trust between partners is a central feature of the relationship. Mayer *et al* (1995), cited in Santoro and Gopalakrishnan (2001:164), describe trust as ‘the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor’. Powell and Brantley (1992), cited in Santoro and Gopalakrishnan (2001:164) take a similar view and state that ‘each organisation has a degree of vulnerability since each forfeits a certain amount of control over their unique resources’. Any changes to the firm or university’s liaison staff, or untrustworthy actions, can, as Mayer *et al* (1995) suggest, ‘quickly change the level of trust in these collaborative ventures’ (ibid:168).

It is fair to conclude, at this point in the study, that *third stream* education policy has generated much discussion in HEIs throughout the United Kingdom. The impact of *third stream* policy has affected both internal and external relationships, as well as the methods of working. This is demonstrated by, for example, the plethora of university “commercial” posts, the establishment of “spin-off” companies, and the numerous “*third stream* projects” that enjoy focused funding which is eagerly pursued by, often, cash-strapped HEIs. An important question is, of course, whether the implementation has been successful. What has been gained?

Section (2.7) below, by providing a review of *third stream* activities in the United States of America, a country that has experienced *third stream*

related policy changes since the 1980s, provides a benchmark for the performance of UK higher education institutions in similar areas of provision. It should be noted that the literature often relates to the premier USA universities and any comparison with post-92 UK universities should consider the difference that exists in research and financial resources.

United States of America Experience

2.7 This section explores the experience of the United States of America in *third stream* activities. North America is generally accepted as a leading region in both the development and exploitation of knowledge, science and technology and this component of the thesis will provide a benchmark for the empirical study of UK Education Policy and HEIs. An examination of the USA experience identifies a sophistication of the research and technology base and demonstrates clarity of policy in the area being researched. In the USA, during the 1980s and 1990s, universities experienced a significant change in ‘the mix of research support’ (Gray *et al*, 2001:252). Whilst the support by industry has doubled during this period, Cohen *et al* (1994), cited in Gray (2001:252), report that 25% of university support comes from ‘a combination of industry and industry-leveraged federal and state dollars’ (ibid). It is suggested that this phenomenon is, to a large degree, a result of the increase in the number of industry-university research centres. The comparison with an established system of exploitation of university research in the USA was seen as desirable by the researcher in his quest to assess the success of UK *third stream* education policy.

USA Policy and Effectiveness

2.7.1 In a study of the effects of Industry-University Co-operative Research Centres (IUCRCs) on industrial R&D laboratories, Adams *et al* (2001:73) report that their ‘findings suggest that IUCRCs promote industry-university technology transfer’. IUCRCs emerged as one of several policies to be developed in the USA since 1980. The centres are generally small academic centres, heavily dependent on industry support, whose purpose is to ‘advance the research of member companies’. Adams and his colleagues argue that the evidence from their study is consistent with this aim.

Adams *et al* (2001:73) identify, in particular, three policies from the 1980s which have influenced technology transfer. The Bayh-Dole Act 1980 gives universities in the USA the right to patent inventions that resulted from research that has benefited from federal government funding. As a consequence of this act there was ‘a large increase in patents and in licensing of university patents’. This view is contradicted by Mowery *et al* (2001:99) who, in a study of three leading universities in the United States (California, Stanford and Columbia), conclude that Bayh-Dole was one of several factors contributing to the increase in patents. These additional factors include increased federal support for basic university research pre-Bayh-Dole and changes in federal policy that eased the patenting of research results. The second policy Adams (2001) refers to is The Economic Recovery Tax Act of 1981. This act prompted companies to support universities by extending R&D tax credit

to academic research which is company-financed. The final policy, put in place in 1982, is The Small Business Innovation Research Act (SBIR). This act provides agency funding to support start-ups, including some that involve university researchers. Cohen (1998) and his associates (cited in Adams et al, 2001:74) point out the difficulty for university researchers of participating in industry funded projects; that is, academics want to disseminate findings and therefore gain in reputation. Companies, on the other hand, motivated by profit, prefer confidentiality. Also, in a survey of research centre directors, Cohen (1998) discovers that company supported research is more applied and that the contents of published papers is more restricted. Notwithstanding these concerns, universities have enthusiastically sought more industry-university collaboration due to the funding opportunities. In the United Kingdom, by comparison, those institutions that are seeking success in the Research Assessment Exercise (RAE) might have similar concerns about any perceived restriction on the dissemination of research findings. Individual post-92 universities, however, may be less concerned with the constraints of engaging in commercial research if they have as an institution, or perhaps on a faculty by faculty basis, opted out of the RAE.

In the United States, Florida (1999:67), whilst observing that the university was seen as ‘an underutilized weapon in the battle for industrial competitiveness and regional economic growth’, is critical of government policy. Florida’s (1999) view is that universities have come to be seen as ‘engines of innovation that pump out new ideas that can be translated into commercial innovations’. By focusing upon, in some cases, ‘quick wins’ with applied research this could result in lost

opportunities for more intense, long-term, research that takes several years to develop to fruition and then exploitation. National and regional policy, Florida argues, is ‘overly mechanistic’ and ‘misses the larger economic picture’ and that universities have a broader role as ‘the nation’s primary source of knowledge creation and talent’ (ibid). Going further, Florida suggests that if policymakers really want to ‘leverage universities’ in the pursuit of economic growth, more emphasis should be given to attracting ‘the smartest people from around the world’, and ‘disseminating the knowledge they create’ (ibid:68). This, more ‘blue skies’ research, is seen as a favourable alternative to the matchmaking between university and industry in order to pursue business objectives. Florida concludes that industry is concerned with “universities’ overzealous pursuit of revenues from technology transfer” (ibid:69). Many larger companies feel that whilst they fund the research, universities try to negotiate intellectual property rights once a valuable research breakthrough is achieved (ibid). It would appear that, despite the respective benefits of collaboration, both sides of the industry-university partnership see some disadvantages.

In the USA, as in Europe, there is evidence to suggest that there is an emerging pattern of transformation as universities become more entrepreneurial (Etzkowitz et al, 2000:326). It is suggested by Etzkowitz (2000) and his colleagues that there are two major trends that will affect the role of universities; firstly, the increasing importance of knowledge production to the economy and, secondly, to seek to identify the future trends in knowledge production and to guide these trends. The focus is towards ‘the socio-economic processes of the contemporary innovation

system – with universities [as] part of a knowledge infrastructure’. The role of the university is to act as ‘a conduit through which knowledge exchange and exploitation is made more effective’. The new structures, both within and between universities, reflect changes to ‘innovation systems’ and ‘encourages new patterns of mobility of both knowledge and researchers’. Those universities which work with companies and government to plan future technological developments, such as ‘foresight exercises’, are more likely to prosper than those institutions that don’t engage. As an example, Etzkowitz *et al* (2000) note the benefits gained by US universities engaged in the field of biotechnology in the 1970s and 1980s from earlier research undertaken in the 1930s and 1940s in the, then, ‘emerging interdisciplinary field of molecular biology’ (2000:327).

In a study of academic research and industrial innovation in the USA covering the period from 1975 to 1994, Mansfield (1998:774) analysed and compared the data in two distinct time intervals; 1975-1985 and 1986-1994. The findings of this study pointed to a decrease in the time it took to commercialise academic research results in the interval 1986-94 compared to 1975-85. The data included, as a result of the research, both the introduction of new products or processes. This difference between the two intervals under investigation would appear to represent an improvement and should be encouraging for all parties, that is, universities, industry and government ‘who have worked to promote closer working relationships between firms and academic researchers’. Interestingly, Zucker and Darby (2001) note that in the United States ‘it is more usual for the academic scientist to work... in the firm’s own facilities’ with the firm’s scientists. By contrast, they report, in Japan

‘collaboration typically involves the firm sending one of their best scientists to work in the academic scientist’s university laboratory’ (2001:53). The apparent success in cutting the time lag between research results and commercialisation that Mansfield (1998) refers to may actually be a consequence of a ‘change in the nature of academic research’. Universities may actually be undertaking ‘more applied and short-term work, often geared toward relatively quick applications’ (1998:775). An interesting observation by Mansfield is that in the period 1975-85 large companies tended to take longer than small firms to commercialise academic research results. In the interval 1986-94 the position was reversed. Mansfield suggests that ‘there certainly is evidence that that they [large firms] have tried to become more nimble’. Whilst the general decrease in the time taken to commercialise academic results could be beneficial to the economy the implications could be quite different, as Mansfield points out, if the change is due to more short-term/applied research (ibid:776). The implication being that this focus upon more immediate results may rob the country of longer-term research results that offer the economy even more substantial technological and financial benefits. It may be useful at this point to note Mansfield’s conclusion presented in a previous paper exploring academic research and innovation (1991:11), that ‘it is difficult to identify and measure the links between academic research and industrial innovation’. This, it is claimed, is due to the degree of dissemination of research results and subtlety of its effect. Mansfield’s conclusion, the difficulty of measuring links in this area of policy, has implications for this thesis and the chosen field of study.

It is apparent, following this examination of the literature on USA knowledge/technology transfer [*third stream*] policy, that there can be benefits for all parties, universities, industry and government, when industry and higher education institutions work together to develop and exploit academic research for commercial purposes. Despite these positives, there are several commentators who are critical of the supposed benefits of US policy. Mowery *et al* (2001:116) claim that the effects of interventions, such as the Bayh-Dole Act discussed above, ‘have received extensive rhetorical attention but modest empirical analysis’. Mowery *et al* are confident that the Bayh-Dole Act has encouraged many research universities that were inactive in patenting and licensing of faculty innovations to revise their policies and engage in this area of work. However, Mowery *et al* are of the view that several factors contributed to this apparent success, and that ‘it is difficult to separate their effects from the Act’ (ibid). Similarly, Adams *et al* (2001) comment that industry-university research centres appear on the surface ‘to generate more benefits than costs’ (2001:84). This ignores the costs of securing the centres and does not address the question as to what benefits there are for the rest of the university not involved with the industry-university research centre. Duggan (1996), in his paper *Promoting Innovation in Industry, Government and Higher Education*, argues that with regard to wealth creation [an important component of *third stream* activity], in the USA only a small group of universities demonstrate ‘best global practice’ (1996:506). This limited group of key wealth creating higher education institutions is exemplified by Stanford University and Massachusetts Institute of Technology (MIT). In the United Kingdom, only a small number of ‘well funded’ higher education institutions could be fairly

compared to these high profile USA universities with global reputations. It would be a gross injustice to post-92 UK universities to be benchmarked against the likes of MIT, for *third stream* outputs, and any such comparisons would need to make adjustments for the massive imbalance of funding and resources that favours these ‘world class’ American universities. Even ‘successful’ traditional universities in the United Kingdom have felt the need to collaborate in order to compete as a world class player. An example in question is the White Rose Consortium which was formed in 1999 by the universities of Leeds, Sheffield and York. These three Yorkshire, with their strong regional, national and, in some areas of provision, international reputations, recognised the benefits from forming the White Rose Centre for Enterprise (Office of Science and Technology proposal document, June 1999). This proposal illustrates the combined research might of the consortium universities against, individually, the performance of Oxford and Cambridge universities. Such is the gap in funding between ‘traditional’ and ‘elite’ universities that even though the White Rose consortium’s annual income from research funding and contracts beat that of Cambridge (£99m against £86m), Oxford University remained in the lead with £104m of research grants and contracts (ibid:4). Funding of this magnitude remains an aspiration for new, post-92, universities who generally receive a smaller allocation of research funding than the more established, traditional, universities.

The following section, (2.7.2), details a number of ideas that follow from this examination of US policy. These findings will inform the empirical

research of *third stream* activities by UK higher education institutions that is the focus of this study.

Advice from the USA

2.7.2 It is useful to have a benchmark; to compare the progress of *third stream* education policy in the UK with that in other developed economies. By selecting North America as the comparator, this doctoral research benefits from an insight into the level of university-industry collaboration in the United States of America. The United States is a country that is generally well regarded for product and process innovation and has a history of universities working closely with private sector organisations.

The proposals from the USA experience are summarised as follows:

- Support should be given to the formation of industry-university co-operative research centres to advance research & development for the benefit of member firms and enable technology transfer.
- Government should practice more cross-departmental policy making. The USA examples in (2.7.1) above; the Bayh-Dole Act 1980, the Economic Recovery Tax Act 1981 and the Small Business Innovation Research Act 1982 are worthy of consideration in their own right, however, it is the *combination* of policy initiatives that is compelling.
- Any partnership agreement between a commercial firm and a university should be well thought out and documented in a binding contract. It is unhelpful to negotiate intellectual property rights after

- The mobility of both knowledge and researchers between university and the commercial partner should be encouraged. The involvement of government can also be advantageous when future technological developments are planned.
- Universities that engage with both companies and employers when planning future technological developments are more likely to prosper than higher education institutions that do not collaborate.
- Avoid a strategy that relies too heavily upon ‘quick wins’ for utilising applied research as this could result in a shortfall of long-term research that is intense in character and may take several years to evolve from the research idea to commercial exploitation.
- Basic, none-commercial, research should be supported by government and the procedure for exploiting research results, such as patenting and licensing, should be accommodating for HEIs.

Some of the above suggestions have already been adopted by the UK government; an example being collaboration between government, higher education and business (see the discourse regarding the 2003 Lambert Review in chapter 4 of this thesis). In order to promote university spin-out companies, Wright *et al* (2004a) note, the UK government has ‘established the £50m “University Challenge” venture capital fund and created 12 Government sponsored “science enterprise centres” (SECs)’ (2004a:235). The success of UK universities has been brought into question in the findings of an Economic & Social Research Council (ESRC) funded research project undertaken by Professor Mike Wright at

Nottingham University Business School. Wright (2004b) is quoted as saying that ‘universities are tending to focus on creating businesses rather than creating wealth. The proportion of university spin-out companies that succeed is tiny’ (2004b:1). The report of the findings of this ESRC funded study is not encouraging and the subject will be discussed further in chapter 3 of this thesis.

A particular criticism of the policies adopted by the United States government is that the effect of university-industry collaboration on commercial projects is to encourage a short-term focus that denies the country the benefits of more intense long-term research. Examination of the expenditure on academic research as a percentage of GDP in 1992 was 0.40% in the USA and 0.36% in the United Kingdom (OECD, table 47, 1999, cited in Pavitt, 2001:765). Data from 1995 (NSF cited by Bercovitz and Feldman, 2006:183) shows (total) university funds as a percentage of GDP in that year as 2.52% for the United States and 2.05% for the UK. The same table provides details of the percentage of university research and development funded by industry; 5.47% in the USA and 6.20% in the United Kingdom. This is an interesting picture as it represents a period of time in which the concepts of academic capitalism and entrepreneurialism in higher education started to receive greater prominence globally. It also, broadly, represents the period that debate on the UK *third stream* policy agenda was starting to permeate through UK higher education institutions. The implications drawn from the data are that although UK higher education, during early to mid-1990s, was less well funded in percentage terms than the United States, when focusing upon basic research alone, the United Kingdom is close to

the USA. Also, the statistic demonstrating university-industry links in the United Kingdom, at 6.20%, is favourable compared to the USA's 5.47%. One possible reason for the United States underperforming against the UK in this measure, given America's global reputation for the commercial exploitation of research output, is that there is a massive concentration of investment by industry in the so called 'ivy league' universities. Nevertheless, these figures would, at the time, have offered the UK government some encouragement if not comfort.

The issue of intellectual property exploitation; spin-out companies and university-business partnerships raised in this section of chapter 2 will be discussed further in chapter 3, which explores the UK government's perspective on the success of its *third stream* education policy, and will provide an important comparator for the face-to-face interviews conducted in this study.

Research Themes

2.8 In chapter 4 of this thesis it is stated that the theory is developed from the data. Notwithstanding this assertion, it has been useful to consider a number of issues that have been generated by a study of the literature in chapters 1 and 2. The following themes broadly represent families of questions and issues that have been grouped together and these themes are intended to inform this study into the impact of *third stream* policy by comparison to the responses of interviewees:

- Perspective of academics on *third stream* policy initiatives
- Evidence of a more entrepreneurial culture

- Changes in the role of academics
- Changes in management style
- Advice from the USA/benchmarks
- Significant issues for the development of *third stream* activities at the three host institutions that are the subject of this study

Although the research themes detailed above have, largely, been generated by a study of the literature, as Bogdan and Biklen (1992), cited in Cohen et al (2000:141) suggest, research questions in qualitative research should be “formulated *in situ* and in response to situations observed”. The degree to which the interviewees’ views relate to these important themes will be discussed in chapter 5 of this thesis. A particular interest will be a comparison of the above themes to those that emerge *in situ*. The importance of this research is discussed below.

Importance of the Research

2.8.1 The higher education sector has, for over a quarter of a century, been seen by governments throughout the world as being central to the prosperity of nations (Clarke, 1998a:vii). Clarke (1998a) notes that ‘governments expect universities to do much more for society in solving economic and social problems’ (ibid:xiii). Commenting on the creation of wealth in the UK, Gray (1999) argues that ‘universities are the great missing factor in regional economic renewal and indeed of the whole country’s development’ (1999:9). Whilst Gray acknowledges that individual academics, and ‘sub-departments’, have been active in working with government departments and business as advisors and researchers, faculties and universities have not, ‘as a whole’, committed.

In terms of benefiting from financial opportunities such as consultancy projects, Gray chides higher education for its poor performance and states that ‘as economic engines, universities have been woefully underpowered and often wilfully neglectful of what could be considered their basic obligations’ (ibid). It is clear that a study in this area of education policy, focused at individual academic level and institutional level, can make a contribution to knowledge in, what commentators report, is an ineffective area of university provision.

A further reason for choosing this field of study is the amount of funding that UK government has committed to the *third stream* agenda. In chapter 1 of this thesis it is reported that HEFCE has allocated £1billion of *third stream* funding (at 2003 prices) during the period 2000/01 and 2010/11 (HEFCE, 2009). It is acknowledged that it would not be appropriate to generalise from a qualitative research study of this nature. However, there is an opportunity cost of providing this funding for *third stream* activities and a study such as this, when taken in association with related work, may make a valuable contribution to the wider *third stream* policy debate.

The final reason for conducting this research is the potential benefits to be gained at the institutional level. Each of the three host institutions will be offered the opportunity for a dissemination session with senior managers and governors conducted by the author of this thesis. The average annual HEFCE *third stream* funding per university is approximately £1m. Some institutions receive considerably more than the average and several universities receive little or nothing from this funding

stream. This research will identify the degree of adoption and implementation of this area of education policy at the three host institutions. The potential benefits to the institutions, it has been suggested, are both financial and scholarly (HEFCE, 2003). Successful *third stream* activities involve research opportunities for staff and students, as well as generating funds that can be used to enhance the facilities of the institution. Supporters of this area of an HEI's work are likely to be sympathetic to the view of government that university-industry collaboration is good for the UK economy.

This study will, hopefully, in a modest way, provide an analysis that can influence future practice at the three host institutions. The study is innovative in that the focus is upon the *third stream* aspect of UK higher education and its impact on three institutions in different stages of development; a traditional university, a post-1992 university and a college with a significant HE provision. All three of the host institutions are located in the same HEFCE region for funding purposes. It should be noted that although government *third stream* policy is aimed at and can financially benefit all HEIs, Maintown College, as with other small higher education providers, is disadvantaged in its limited capacity to bid for this particular allocation of government funding. Of course, not all *third stream* activities require government funding and this is one of the positive aspects coming through in section 2.3 (entrepreneurial universities) in this chapter of the thesis.

Conclusions

2.9 In the UK, since the late 1980s, there has been a continuous drive for greater efficiency in higher education. This objective has been fuelled by a reduction in the unit of resource. Successive governments have encouraged the move towards a mass higher education system resulting in universities trying to do ever more with a diminishing unit of resource. The 2003 UK Higher Education White Paper spells out the government's intention to provide further incentives for the development of links with business for the less research-intensive higher education institutions. Even the more research-intensive universities will, it is suggested, be expected to produce research proposals that identify the practical benefits from research. Over time, higher education has experienced a gradual move towards "managerialism" which is replacing the collegiate management model. "New managerialism" draws from the practices and discourses of the profit-seeking private sector.

The UK government's enthusiasm for its *third stream* policy, ostensibly to encourage university-industry links and wealth creation, is seen by some commentators to be merely a useful fillip to the funding of higher education. The view of HEFCE is that many universities are responding to the challenges and opportunities that the *third stream* policy has brought. However, there is an alternative view in some quarters that higher education in the United Kingdom is failing to engage with the outside world and that those outside of HE do not appreciate the resource that universities have to offer or have an understanding of how that resource can be accessed. This combination, it is suggested, results in

universities falling short in the contribution that they could make to the development of the economy and the creation of wealth.

A major concern is that research will no longer be funded for the purpose of broadening knowledge and understanding, but will be something narrower, vocational in nature and will be pursued for reasons of profit rather than for general dissemination. The funding of research-intensive universities, the so called 'elite' institutions, remains controversial and is causing an increase in tensions across the higher education sector. These funding concerns, and the challenges of an increasingly knowledge-based society, are seen as a powerful force for change in the higher education sector. A significant advantage of this change, it is argued, is that higher education institutions can benefit from a more diversified funding stream and have less of a dependency on government. That said, even the most ardent of supporters of the entrepreneurial university accept that the embracing of entrepreneurialism by all universities has some distance to go.

An examination of the literature on the effects of government policy in North America, regarding industry-university links, has provided a benchmark by which to compare the performance of the UK government's performance in *third stream* activities. Three Acts in the USA to support collaboration between higher education institutions and industry, and the commercialisation of research results, have had a degree of success. This success has motivated United States universities to enthusiastically embrace, and increase, industry-university collaboration. If anything, in the USA, there is an emerging pattern of transformation as

universities become more entrepreneurial. Although there are some benefits emanating from a comparison with the experience in North America it should be noted that some of the ‘advice’ has already been adopted by the UK government such as establishing a venture capital fund to encourage science enterprise centres via the “University Challenge” funding scheme.

Commentators are divided regarding the desirability of higher education working in collaboration with industry for commercial gain. It is suggested that the positives of this aspect of government education policy, the *third stream*, is that the commercial exploitation of university research is good for the economy and contributes to the competitiveness of the United Kingdom in increasingly global markets. Supporters claim that such an arrangement actually encourages research. Critics, however, counter-claim that applied research is short-term and primarily focused upon looking for quick-wins rather than long-term, more in-depth, research. It is recognised that the skills of senior management may be a major impediment to the transformation of an HEI into a truly entrepreneurial university. This chapter concludes with the question as to whether the traditional ‘administrator’ can evolve into the dynamic, all inspiring, leader-manager equipped with the necessary skills and competencies to forge a vision that will be the basis to propel the institution to new heights in both scholarly activity and commercial success.

The literature reviews conducted in both chapters 1 and 2 have exposed the need for empirical research into the adoption and implementation of

third stream activities by higher education institutions. Whilst the first chapter of this thesis has highlighted the difficulties that governments experience in successfully introducing intended policy changes and provides key insights into the complexity of policy-making and the imprecise nature of the process; chapter 2 has focused specifically on *third stream* policy and has identified the opportunities and challenges facing higher education institutions as they respond to this aspect of the UK's education policy. A number of contradictory views detailed above have been identified in the literature review of *third stream* education policy in this chapter. Firstly, whereas the Higher Education Funding Council for England emphasises the positive responses to *third stream* policy; other commentators put forward an alternative view that higher education institutions (HEIs) are not making the contribution to economic development and wealth creation that should reasonably be expected. Secondly, although some observers are convinced that *third stream* policy results in the diversification of funding and reduced dependency on government, an alternative view that is postulated is that research funding will increasingly become more narrowly focused and more vocational in its orientation following, as it does, a profit motive. Finally, the verdict on the benefits of higher education – industry collaboration is divided with one school of thought being that the commercial exploitation of university research brings rewards for the UK economy and is a stimulus for research. An opposing position is that the exploitation of applied research is more concerned with gaining quick wins rather than the application of more long-term, in-depth, research.

The importance of these policy issues, in the researcher's opinion, and following a review of the literature, warranted this study; the complexity of these policy differences, and their assessment, are unlikely to be explored satisfactorily by the use of quantitative research methods. For this reason a qualitative approach has been taken in this study. The next chapter involves a detailed consideration of the United Kingdom Government's perceptions of higher education institutions' *third stream* performance.

Chapter 3

Government Perception of HEIs' Third Stream Performance

3.0 This chapter examines the detailed data provided by the UK Government's Higher Education Funding Council for England (HEFCE) in respect of the interaction between higher education and business; this analysis is to ascertain the Government's perception of *third stream* performance of higher education institutions. Discourse analysis method (Banister *et al*, 1994; Ball, 1994) is applied to a range of government policy documents so as to identify the government's intention. The Lambert Review of Business - University Collaboration has been selected for particular focus in this doctoral research due to the very specific remit that it had been given by the UK Government and the significance of the report both to the higher education sector and the business community. The complexity and problems of policy-making have been highlighted in chapter one of this thesis and a definition of *third stream* was provided; that is, '*third stream* activities are concerned with the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments' (Science and Technology Policy Research [SPRU], 2002:iii). In chapter two, there is a literature review of academic journals and texts to identify and understand the characteristics of the United Kingdom's *third stream* education policy. As reported in chapter two, views are divided as to the desirability of higher education working in collaboration with industry for commercial gain. Supporters of *third stream* suggest that there are benefits for the economy and that the exploitation of university research

contributes to the competitiveness of the United Kingdom. Individual higher education institutions, supporters suggest, become more dynamic, more entrepreneurial, organisations where such arrangements actually encourage research. Critics (Halsey, 1992; Nixon, 1996; Trow, 1993; Kirby, 2006; Williams, 2002) provide numerous counter-claims including the perceived negative effect on collegiate cultures of HEIs becoming more 'business like'; the pressure to focus on research quick-wins rather than concentrating upon more in-depth, long-term, research; and, finally, the distraction that commercial activities pose to the core theme of the tutoring and support of students.

In this key chapter of the thesis, which provides substantial detail as to *third stream* performance, the focus is upon determining the perception of the UK government of the success of its *third stream* education policy as exemplified in the texts and discourse that are available in documents provided by government and its various agencies. The performance of higher education institutions (HEIs) in *third stream* activities is given particular attention. For the purpose of this study, in addition to White Papers, Acts of Parliament and policy initiatives, 'government' is taken to mean any formal body concerned with the education system that is not independent of government influence. This includes funding agencies such as HEFCE (Higher Education Funding Council for England) and the Research Councils as well as influential reviews such as those resulting in the Lambert Report (2003b) and the Leitch Report (2006). The view taken by the researcher is that government instigated/commissioned reviews probably reflect, in some part, the government's view via the terms of reference that is provided for a particular Review Committee and

the composition of its membership. It is thought likely that, particularly when the individual members have known opinions on the area under review, their personal views will inevitably be reflected in some way in the conclusions and recommendations of the particular Review Committee. For these reasons, the findings of these committees are worth exploration as is the 'official response' by government. Also, and this may be controversial, the independence from government influence of Universities UK (UUK), previously CVCP, is also questioned and it treated by the author of this thesis as part of the 'education establishment'. All of the documents selected for examination are relevant to *third stream* policy.

There are no signs that the enthusiasm for *third stream* education policy by the United Kingdom Government is diminishing. On the contrary, the Higher Education Funding Council for England (HEFCE) has initiated exploratory work to promote '*third stream* as second mission' to enable universities 'to play a greater role in fostering productivity and economic growth'(2007a:1). For higher education institutions that embrace this policy initiative, *third stream* activities would become 'their second mission focus, after teaching' (ibid). HEFCE (2007a) wishes to determine the contribution that such HEIs can make to find 'new users' for their services and identify 'the activities they might undertake which could impact on productivity and growth of local and regional small to medium-sized enterprises (SMEs) as well as public sector services' (ibid:1). HEFCE reports that it 'initiated some experimental projects which aim to demonstrate the potential benefits to the economy of *third stream* focused HEIs'. It is intended that the projects will be

independently evaluated and that evidence will be compiled ‘at various points to feed into policy developments’ (ibid). Interestingly, all five HEIs participating in this project are new, post-92, universities; there are no less research-intensive ‘traditional’ universities involved in this ‘experiment’. Of the five contributors, one university seeks to ‘explore a better, more sustainable way for less research intensive universities to engage with SMEs’ and another contributor institution ‘seeks to re-engineer the university to meet the needs of SMEs’ (ibid). Of the other three projects it is more difficult to see their relevance to the strategic, organisational and cultural imperatives that ‘*third stream* as second mission’ will demand. These three projects relate to (i) ‘action learning’, (ii) ‘latent capacity in food-specific and related research’ and (iii) to ‘create a comprehensive delivery vehicle for the commercialisation of intellectual property’ (HEFCE, April 2007a:2). Although these last three projects may be worthy in their own right, it is unlikely that other, similar, work has not previously been undertaken by other academics/HEIs. Also, it is difficult to see how these three particular projects will significantly inform such a major adjustment to *third stream* education policy, that is, *third stream* as second mission. Section 3.1 below examines HE – business interaction in detail.

Higher Education – Business Interaction

3.1 In order to ascertain the success of *third stream* policy HEFCE conducts an annual Higher Education – Business and Community Interaction (HE-BCI) survey. Logic would suggest that a policy development report such as HE-BCI can be used year-on-year, or over a longer period, to measure the success of *third stream* funding. It seems

reasonable to assume that criteria will be established, with appropriate outcomes, to measure performance. The researcher of this doctoral study has taken the focal points as 2000-01 and 2005-06. On the cover of the 2000-01 HE-BI report (now HE-BCI), HEFCE (March 2003b) proclaim that this survey ‘demonstrates widespread improvement in interaction between the higher education sector and business, compared with 1999-2000’. This period (2000-01) appeals as a baseline due to HEFCE’s (2003b) claim that improvements have already been achieved and it is not a zero base. By selecting this year as baseline HEFCE has had the opportunity to refine the criteria that it is applying, based upon this early performance, and clarify the direction that *third stream* education policy is taking UK higher education institutions. Also, HEFCE (ibid) has acknowledged that the 1999- 2000 HE-BI report included ‘perceived ambiguities’ (ibid:8). It is worth noting that in the 2000 invitation to HEIs to apply for special funding via the Higher Education Reach-out to Business and the Community Fund (HEROBC), a major element of *third stream* funding, HEFCE (February 2000) state that ‘we do not intend to prescribe in detail the purposes to which funds may be put; this will be for institutions to decide in the light of their own strategic needs’ (2000:4). However, it was made clear that any bid ‘should have regard to the objectives of the funding partners’; that is, HEFCE’s corporate objectives as the main government funding body for HEIs (ibid:5).

A major theme that has emerged in this study, as discussed in chapter one of this thesis, is that globalisation and the exploitation of new technologies are central to government policy in its desire to improve the competitive position of the United Kingdom in the global economy. The

Learning and Skills Research Centre (2002), which received Department for Education and Skills support, commented in its Research Strategy 2002-5 that ‘the 21st-century economy will be increasingly globalised, fuelled by fast-changing scientific and technological developments’ (2002:13). In a statement on competitiveness to Parliament on 12th December 1998, the Secretary of State for Trade and Industry informed the House that ‘the starting point for the Government’s analysis is that knowledge and its profitable exploitation by business is the key to competitiveness’ and that ‘we [the UK] will only win by developing innovative goods and services that customers want to buy and that use world class production systems’. The Secretary of State expressed the view that the UK required ‘the most sophisticated technology to keep us ahead of our rivals’ (1998:1). The Centre for Research into Quality (Harvey *et al* 1997), a recipient of ‘financial assistance’ from the former Department for Education and Employment (DfEE), commenting on HE-Employer links, confidently states that ‘collaboration between employers and higher education is recognised by all stakeholders as beneficial’ (Harvey *et al*, 1997:103). There is an emerging pattern emanating from government, and some almost quasi-governmental like organisations, that increased competitiveness is the Holy Grail and the exploitation of university research by business is the route to this achievement. This can only happen with the cooperation of higher education and a willingness of HEIs to work with industry; therefore, it is understandable why government appears eager to see a return on the investment that it has made in *third stream* funding. The tone of the quotations above is positive, without providing evidence for the optimism. The discourse surrounding *third stream* policy frequently sounds more economic than

educational. This discussion will be continued in section 3.3 of this chapter with an analysis of UK Government White Papers such as Innovation Nation (DIUS, 2000a), and key HEFCE documents such as the current HEFCE Strategic Plan (2007e).

This initial scenario, described above, provides an introduction for the researcher to look at what precisely the government funding bodies' criteria are and how success is measured. It is important to note that the funding bodies, HEFCE and the Office of Science and Innovation (OSI), have stated that they need more detailed feedback on *third stream* funding and, in 2007, have put out to tender 'a study to evaluate what has been achieved to date by HEFCE/OSI *third stream* funding in terms of its original aims – to achieve culture change and embed capacity toward optimising the direct and indirect impact of HE' (February 2007b:3). These 'special funds' were introduced in 1999 'specifically to support HE institutions to increase their capacity to respond to the needs of business and the wider community, where this would lead to wealth creation' (ibid:1). A number of points are to be explored by this proposed HEFCE/ISO (2007b) study including:

- The direct deliverables from HEROBC/HEIF [Higher Education Innovation Fund] rounds.
- The impacts and outcomes achieved internally within the HEI and externally for business and the community.
- Who has benefited from the transfer of HE knowledge; business, community etc; size and location?

- The contributions to *third stream* achievements by different HE subjects (eg, science, social science, arts and humanities).
- The context and other factors that have an impact of *third stream* performance and the degree of confidence with which *third stream* impact can be judged.
- The extent to which *third stream* activities and culture are embedded and would be sustainable if government support were phased out. (HEFCE, 2007b:4)

Potential bidders are advised that *third stream* funded activities have ‘been monitored by HEFCE through a light touch annual monitoring return’. This process involves a comparison of the actual progress ‘against the planned activities and targets’ (ibid:5). These ‘terms of reference’ are, in the view of the author of this thesis, worthy and add value to the *third stream* debate. By implication, it is unlikely that existing mechanisms are, in sufficient detail, providing government with an appropriate level and quality of information to fully assess the effectiveness of this policy area.

HEFCE (2003b), via the annual Higher Education – Business and Community Interaction survey, asks HEIs in which areas they see their institution ‘making the greatest contribution to economic development’ and they are invited to ‘pick the three most important areas’ (2003b:10). In the 2000-01 survey, the top five areas identified were: *access to education* (55%), *research collaboration with industry* (39%), *technology transfer* (37%), *meeting regional skills needs* and *meeting national skills needs* (both 29% each), and, *developing local partnerships* (24%). These

total figures for 2000-01 were broken down into responses from higher, medium and lower research intensity institutions. This facility highlighted significant differences of opinion through the range of research intensity; for example, the proportion of higher research intensity HEIs identifying *research collaboration with industry* was 70%, whilst lower research intensity HEIs was 8% (ibid). In the 2005-06 HE-BCI survey (HEFCE, 2007c:14), the breakdown by research intensity has given way to a breakdown showing HEIs proportions by region (England, Northern Ireland, Scotland and Wales). The top five areas identified in this survey were: *access to education* (62%), *research collaboration with industry* (36%), *technology transfer* (36%), *meeting regional skills needs* (36%), and, *supporting SMEs* (29%). The differences in responses in this survey, by region, are considerable; for example, English HEIs rate *research collaboration with industry* 39% whilst Northern Ireland's proportion is 0%. With regard to *technology transfer*, Northern Ireland score it 100% compared to England's 34%. It is recognised that the number of HEIs in Northern Ireland is very small compared to the number of English higher education institutions. Other significant observations from both HE-BCI surveys are that *spin-offs* only managed a UK total of 8% in 2000-01 and that that figure fell to 4% in 2005-06; with England showing a figure of 2% compared to Northern Ireland's at 50%. Rises were recorded for *Access to education* (62% up from 55%), *meeting regional skills* (36% up from 29%) and *supporting SMEs* (29% up from 23%). Small falls were experienced by *research collaboration with industry* (down from 39% to 36%) and *technology transfer* (37% down one percent to 36%) (HEFCE, 2007c:14).

What the above figures demonstrate is a low prioritisation of university spin-off companies and, with the exception of support for SMEs (small and medium enterprises), a modest fall in the prominence of research and technology transfer links with business. Teaching related areas, access to education and meeting regional skills, have registered an increase in importance. Is this evidence that higher education institutions are turning away from the most recognised component areas of *third stream* activities? How does this trend compare with the government and HEFCE's priorities? Spin-offs, with the seductive notion of the exploitation of intellectual property for commercial gain are, for example, frequently mentioned in the literature and government documents as an illustration of best practice in HE – business collaboration (the 2003 Lambert Review of Business-University Collaboration, the most focused review of HE-business collaboration during the current administration, is explored in some detail in section 3.2 of this chapter). In the 2000-01 HE-BCI report, in the 'Analysis' section relating to trends and comparisons, HEFCE (2003) gave prominence to the following; (A) institutional strategy and economic development, (B) collaborative research with business, (C) intellectual property [IP], (D) consulting activities, and, (E) spin-off firms (HEFCE, March 2003:2). Reference to the last four sections, (B) (C) (D) and (E), can be found widely in the literature as exemplars of *third stream* activities (Wright *et al*, 2004a and 2004b; Kirby, 2006; Heirman and Clarysse, 2004; Druilhe and Garnsey, 2004). In the 2005-06 HE-BCI report, the 'Analysis' components have been modified and are presented as; *strategy, infrastructure, research-based interactions and intellectual property exploitation, social, community and cultural activities, regeneration* and, finally, *education and CPD*

(HEFCE, 2007c:2). Although a comparison, where data permits, will be made of 2000-01 outcomes with those in 2005-06, it is possible to observe that there is a trend towards 'softer' objectives by HEFCE. The prominence of spin-offs and scientific discovery, it can be argued, has been reduced and *third stream* strategic indicators such as 'distance learning for business' and 'the HEI as an enquiry point for SMEs' are enjoying a higher profile.

A further HEFCE document that is relevant to *third stream* was published in April 2002. This 'good practice' report is entitled '*Evaluating the Regional Contribution of an HEI – a benchmarking approach*' which was developed by the Centre for Urban and Regional Development Studies (CURDS) at the University of Newcastle upon Tyne. The object of this project was to provide individual HEIs with the means to assess their regional impact. The intention was to 'highlight not just linear relations between an HEI and its region, but also a wide range of strategic interactions'. A strategic priority could be, for example, 'regional development processes which link between... community regeneration and the formation of new firms' (2002:3). The report includes a section on business development processes and focuses upon 'the direct impacts of HE on business performance within the region'. The emphasis of this benchmarking tool 'is on the benefits for the region through the development of the business base' (ibid:22). The areas designated for benchmarking are:

- Strategic plan for business support
- Creation of spin-off firms
- Engagement in inward investment

- Promoting graduate entrepreneurship
- Graduate start-ups arising from HEI programmes
- Availability of entrepreneurship modules
- Student placements with local employers
- Incentives for staff to engage with business (ibid)

(See Appendix B for the Process Cycle)

These benchmarks do appear to have merit, particularly given the potential regional benefits, and we do see both familiar activities such as spin-offs and welcome (some may say overdue) additions such as the provision of incentives for staff to engage in *third stream* activities. An additional document that is pertinent to this study is the 2004-05 HEFCE Annual Review (2005b:22) in which the funding body details the ‘progress against key performance targets’ and outlines its strategic aims in a range of categories. In addressing its success in supporting all HEIs ‘in making a significant and measurable contribution, through knowledge transfer and related activities, to economic development and the strength of communities’, HEFCE reveals three key performance targets that are relevant to this strategic aim [HEFCE’s evaluation of performance follows in italics]:

[1] ‘By 2005 we will be able to demonstrate the year on year improvement in the collaborative and individual interactions of all HEIs with business and the community, related to national social and economic benefit and evaluated from annual collection of robust data.

Result: Achieved. *The HE-business and community interaction survey was published (HEFCE 2005/07). It shows a further significant improvement in the performance of the UK HE sector’.*

[2] ‘To develop by 2005-06 a set of objective measures of what is delivered over the planning period from an established baseline.

Result: On target. *The measures have been refined to include social and community interactions. We do not intend to make major changes for 2-3 years. Results of the survey are being used by the Government and other stakeholders’.*

[3] ‘By 2008, we intend to have secured funding to support these activities at an aggregate annual level across the sector greater than that announced in the 2002 Spending Review.

Result: Achieved. *Funding for a third round of the Higher Education Innovation Fund was confirmed at £238m, an increase of over 25% over the second round’.* (HEFCE, 2005b:23)

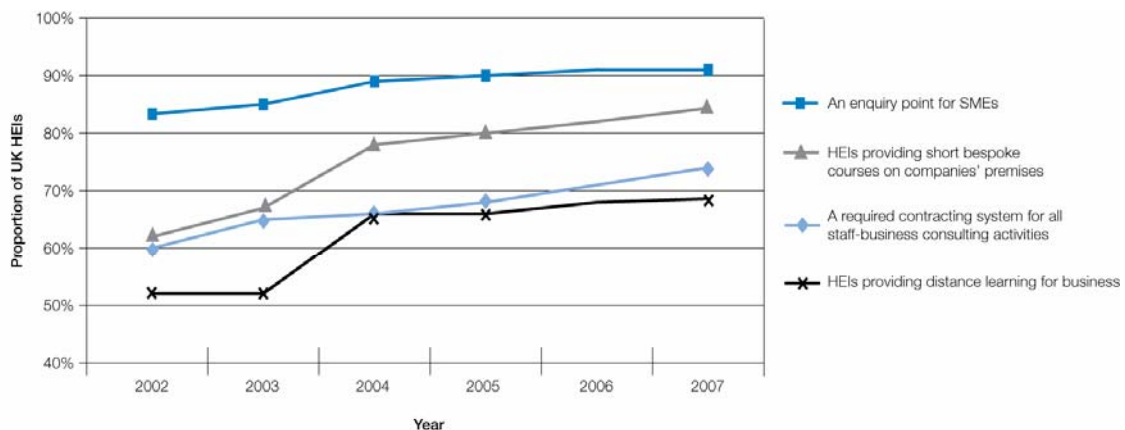
The above targets are not generally shown as ‘SMART’ (specific, measurable, achievable, reliable and time-bound) and relate more to how HEFCE has allocated funding, and its processes, than specific examples of the outcome of HE-business interaction (such as the number of business start-ups emanating from university research breakthroughs). The desirability of using SMART as an analytical tool is discussed in page (139) of this chapter. This HEFCE Annual Review (2004-05) adopts a congratulatory tone in respect of, what is described as, ‘*third stream success*’ (2005b:13). These ‘successes’ include ‘continuing growth in

these [HE-business] links’; and, ‘most universities and colleges now provide a single point for businesses to help them determine their needs from higher education’. Other ‘successes’ involve commercial and non-commercial organisations spending circa £130m on continuing professional development (CPD) with HEIs and, also, that 55% of English HEIs prioritise ‘access to education’ in relation to economic development activity. The only clear reference to technology transfer/intellectual property related success is the report of 13,000 full-time equivalent staff, in the United Kingdom, working in spin-off companies with a combined turnover of £358m. No comparators such as performance against specific target, or increase on baseline, are provided in the Annual Review (2005b:13). The performance trends, detailed in the HEFCE (2007c) Higher education-business and community interaction (HE-BCI) survey report for 2005-06, become significant and, therefore, are discussed below. At this stage of this study, it is clear that the Higher Education Funding Council for England has a positive perception of HEI’s *third stream* performance; examination of the HE-BCI survey report will highlight the basis for the funding council’s confidence.

The first thing to observe from *figure 1* below, taken from the HEFCE 2004-05 HE-BCI survey report (2007c), is that none of the selected strategic indicators are directly related to breakthroughs in university research or technology transfer. Two of the four indicators, the provision of short bespoke courses and distance learning, are not new areas of provision; both having been offered by many HEIs over several decades. The HEI as an enquiry point for SMEs (small medium enterprises),

although welcome in economic development terms, is certainly not groundbreaking in terms of university *third stream* activities. With regard to the trends; as *figure 1* demonstrates, all four strategic indicators have shown an improvement from the baseline figure in 2002 to the position in 2007. Notwithstanding the researcher’s reservation regarding the items selected as strategic indicators, the picture presented is a positive one.

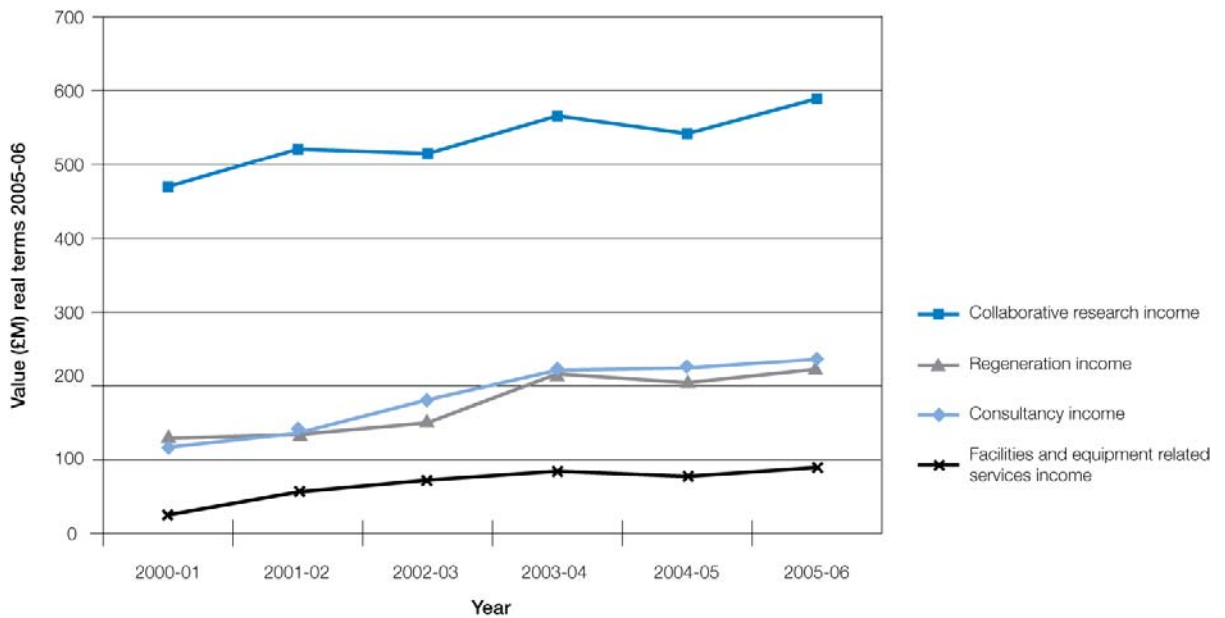
Figure 1: Selected *third stream* strategic indicators (HEFCE, 2007c:5)



The following graph, *figure 2*, is encouraging in that collaborative research income has increased by over £100m from the baseline position that was achieved in 2000-01. Improvements to both consultancy and facilities income are likely indicators of a more commercial approach taken by HEIs. The rise in regeneration income is possibly a sign that strategic partnerships, such as those with public sector organisations, have been strengthened. Apart from funding for *facilitating partnerships*, regeneration income is also allied to diverse areas such as *facilitating community development, building strategic links with industry and enhancing knowledge of labour market needs* (HEFFCE, 2007c:32). The income from regeneration programmes is obtained from ‘regional,

national and European funding bodies’ and ‘the three major regeneration funding streams accessed by UK HEIs [are] European Social Fund (ESF), European Regional Development Fund (ERDF) and Regional Development Agencies (RDA) (ibid:30).

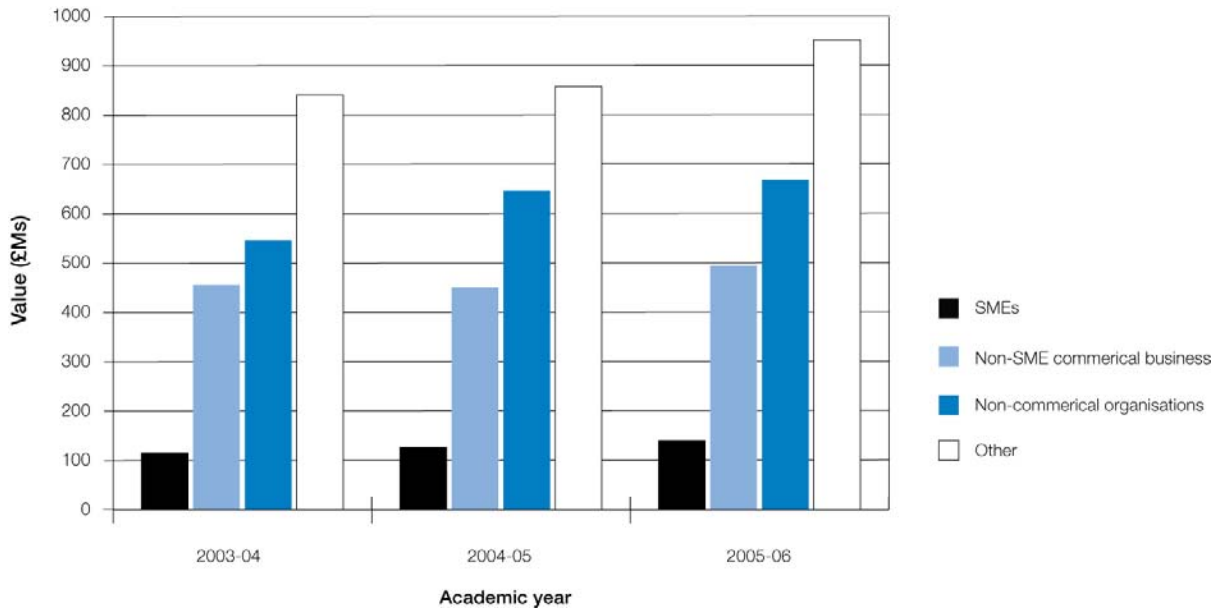
Figure 2: Selected *third stream* financial indicators (HEFCE, 2007c:6)



HEFCE (2007c:10) report that ‘the positive trends noted in previous HE-BCI surveys have continued’ and that ‘overall income that HEIs received from business and the community interactions rose by 6% from 2003-04 to 2004-05 and by a further 8% over the period 2004-05 to 2005-06 when it exceeded £2.25 billion’. This figure does not include income of HEI owned spin-off companies but does include income from the sale of shares in spin-outs by HEIs. In *figure 3* below ‘other’ includes the sale of spin-off company shares as well as collaborative research, income from regeneration activities and CPD (continuing professional development).

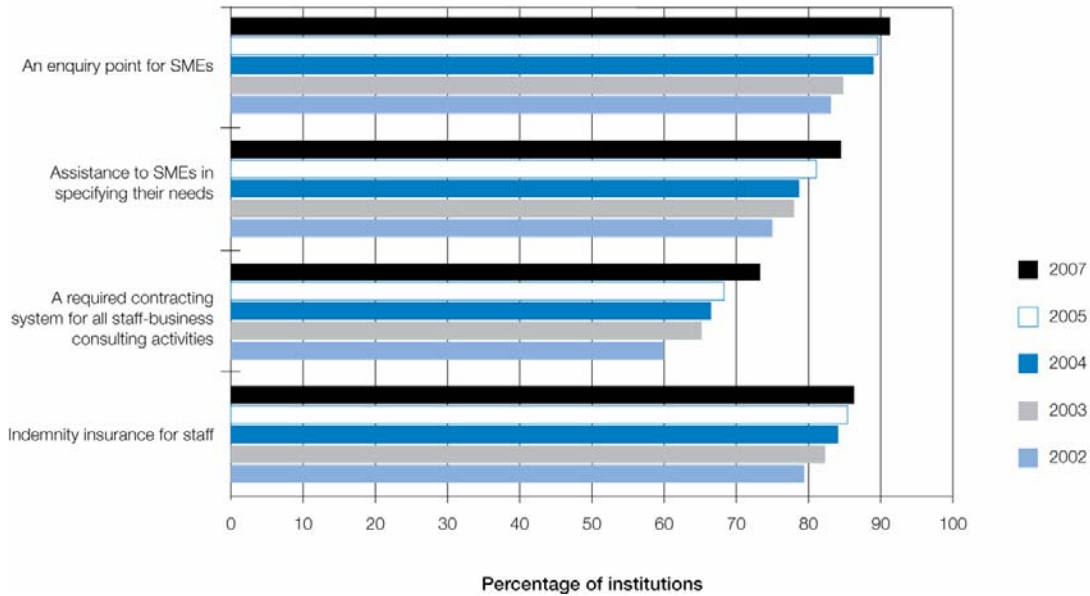
The year on year increases are encouraging, if not spectacular, given HEFCE's ongoing investment in *third stream* activities.

Figure 3: Total HE-BCI income, by partner (HEFCE, 2007c:10)



The following chart, *figure 4*, illustrates the specific infrastructure that HEIs have in place to attract and serve SMEs. The view of HEFCE is that SMEs have traditionally been ignorant with regard to the range of provision HEIs can offer to them and that SMEs have generally struggled to understand how to access the expertise that is available. Professional indemnity insurance and contracting arrangements represent the move towards more formal arrangements by higher education institutions with their staff. Also, these arrangements can be seen as a measure of how universities have generally become more professional in their dealings with private sector organisations and, at many HEIs, they have adopted a more commercial approach in their dealings with companies (2007c:18).

Figure 4: HEIs with selected innovation infrastructures (HEFCE, 2007c:19)



Consultancy work has long been undertaken by individual academic staff on their own behalf, at higher education institutions, and this is recognised by the funding council (ibid:20). HEFCE (2007c) has identified the benefit to HEIs of consultancy and states that ‘the innovative application of existing knowledge (the HE-BCI definition of consultancy) can be profitable and also the first step to towards building more formal and beneficial relationships between HEIs and business and the community’ (ibid). *Figure 5* below demonstrates the different ways that HEI organise for consultancy work. The three forms of organisation that are shown reflect the difference between conducting consultancy via a central unit/department; through a HEI owned company or, in a much smaller number of cases, from within the faculty (ibid). *Figure 6*

illustrates that the total income that HEIs have received from consultancy has doubled in the period 2000-01 to 2005-06 (ibid:24).

Figure 5: HEIs' methods of managing their consultancy work (HEFCE, 2007c:20)

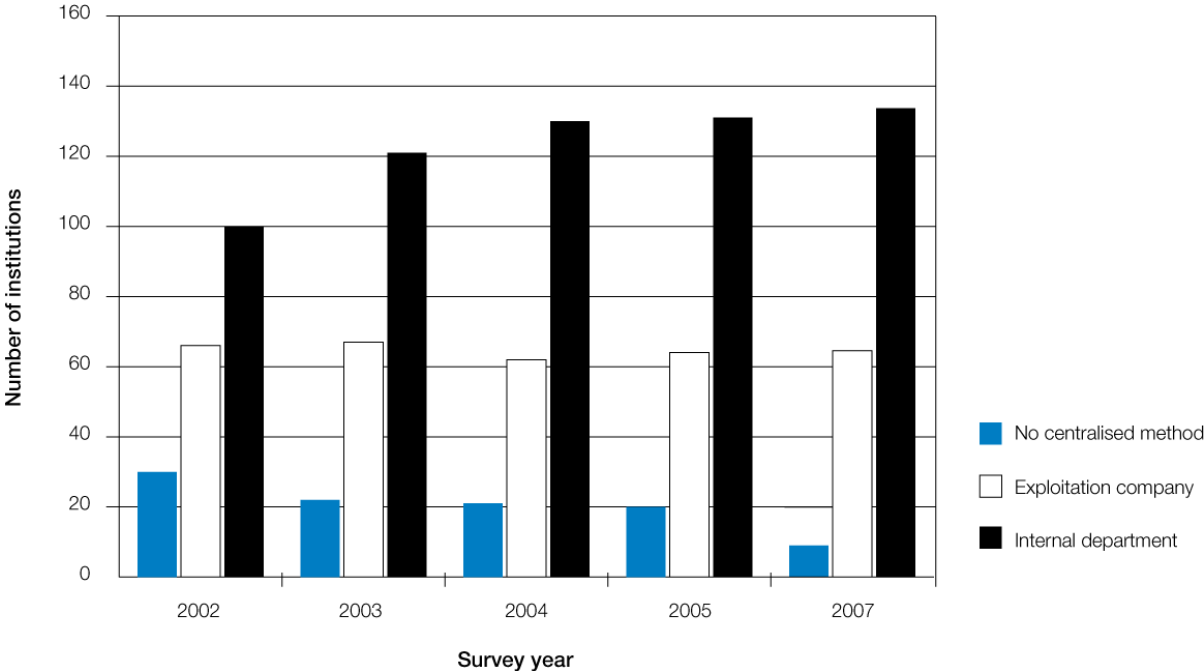
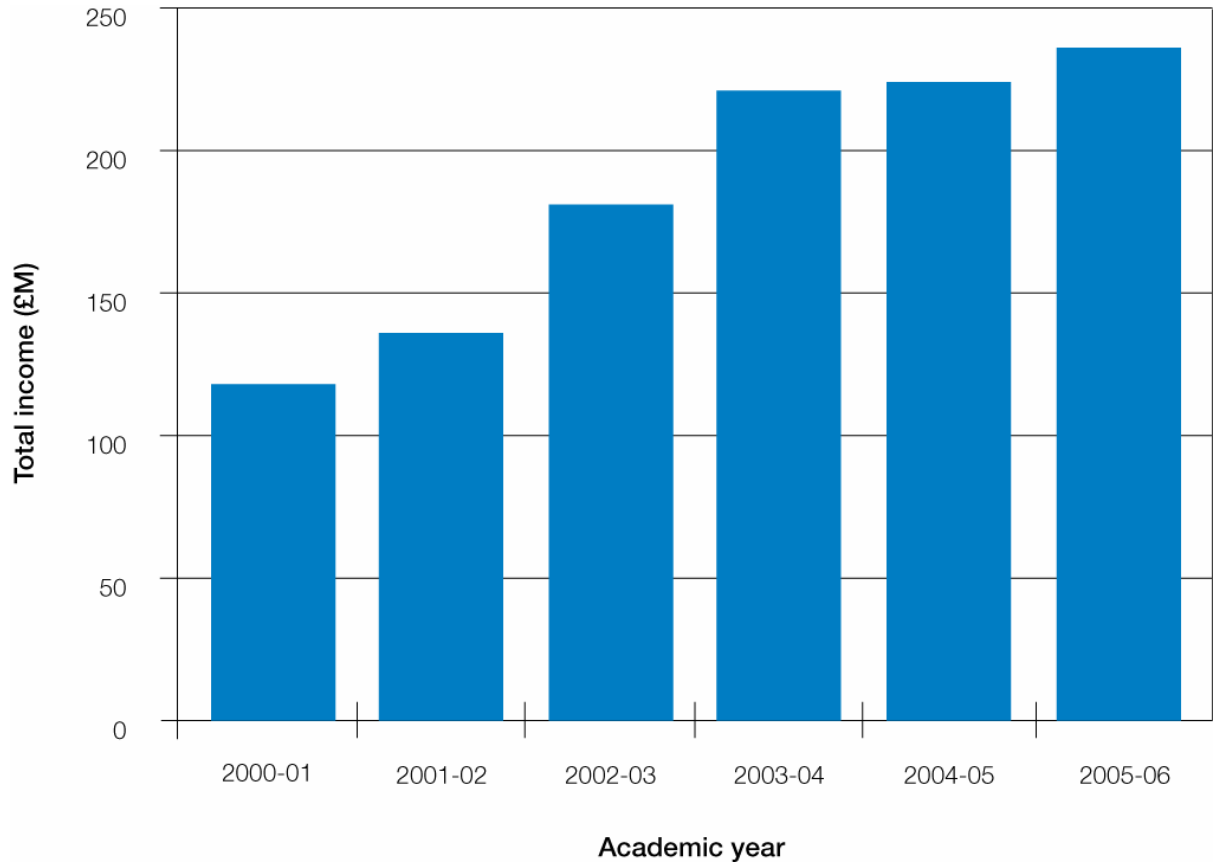


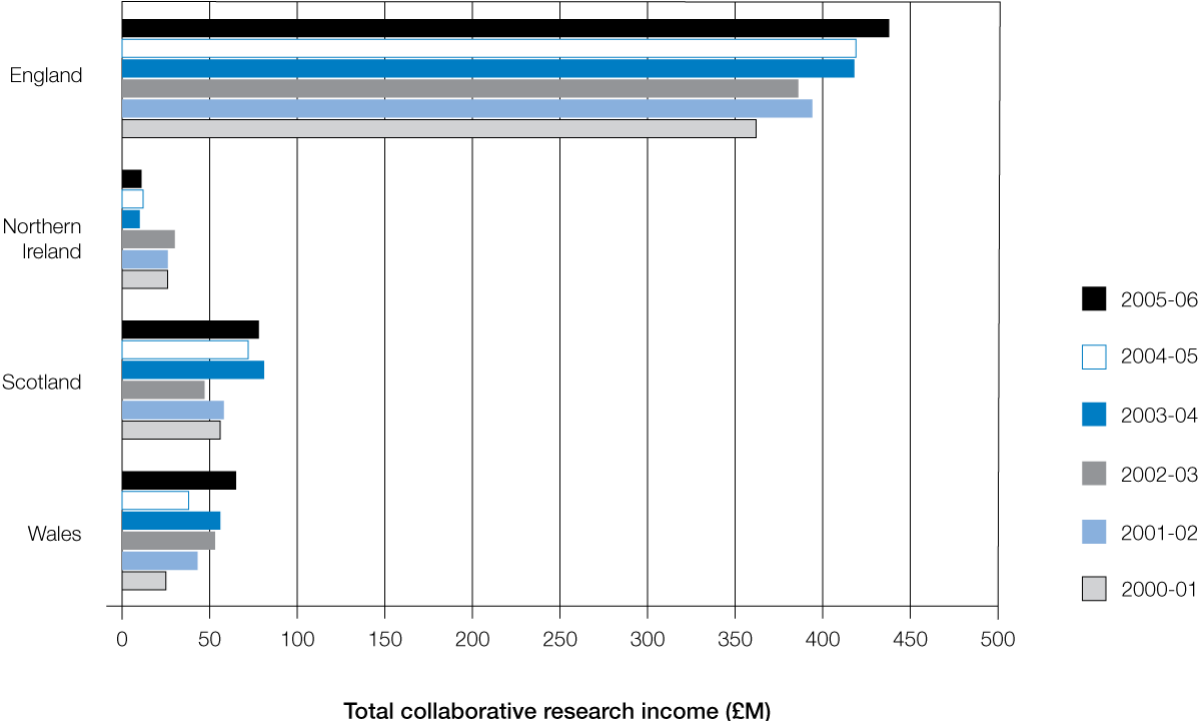
Figure 6: HEIs' total income from consultancy work [2005-06 prices]
(2007c:24)



The financial indicators in the HE-BCI surveys, HEFCE (2007c) report, 'have continued to show increases, suggesting that HEIs have been successful in reaching out to business and the community' (2007c:22). Research income emanating from HEIs and business collaborating has, overall, risen in the United Kingdom due to increases by England and Wales (see *figure 7* below). As important as income is to HEIs, HEFCE emphasise that 'the Government has invested in building capacity in the HE sector to respond to the diverse needs of business... rather than simply maximise income' (ibid). Funding to increase the capacity of knowledge exchange includes infrastructure costs. HEFCE (2007e)

declares that *third stream* funding has ‘increased the capacity and effectiveness of knowledge exchange between HE and users of all kinds’ and is intent on integrating these ‘activities fully into all HEIs’ (2007e:36). The range of ‘users’ of knowledge that has emanated from HEIs extends beyond commercial businesses and includes ‘public services, social enterprises and arts and cultural institutions’ (ibid). The exchange of knowledge has benefited users in a variety of ways ‘including new ideas, products and services, highly qualified people and skills and equipment’ (ibid). HEFCE (2007c) advise that collaborative research is complex involving staff exchanges and the sharing of other resources such as equipment. As a consequence of this complexity, and unless ‘such in-kind payments’ are included in contracts; it is not possible for these values to be accurately estimated in the HE-BCI survey report (2007e:22).

Figure 7: Formal collaborative research income [2005-06 prices] (2007c:22)



The exploitation of intellectual property (IP) is central to the implementation of *third stream* education policy and ‘disclosures and licences are a simple indicator for much of the exploitation activity carried out by HEIs’ (ibid:24). The need for disclosure is when ‘an HEI recognises that research may require protection; licensing is the moment that protected IP is exploited’. HEFCE report that disclosures by United Kingdom HEIs have consistently increased, year on year, from 2000-01 to 2005-06 (ibid:25). The rise in the total number of licences granted to external organisations by HEIs, in the same period, has been substantial; increasing from approximately 800 in 2000-01 to 2,699 in 2005-06 (see *figure 8*). Non-software licences accounted for 74% of total licences granted to external partners in 2005-06 (ibid:26). Although this increase in the number of licences can be seen as a positive by HEFCE, the income trend from IP exploitation (see *figure 9*) is flat (ibid).

Figure 8: Number of licences granted by HEIs (HEFCE, 2007c:26)

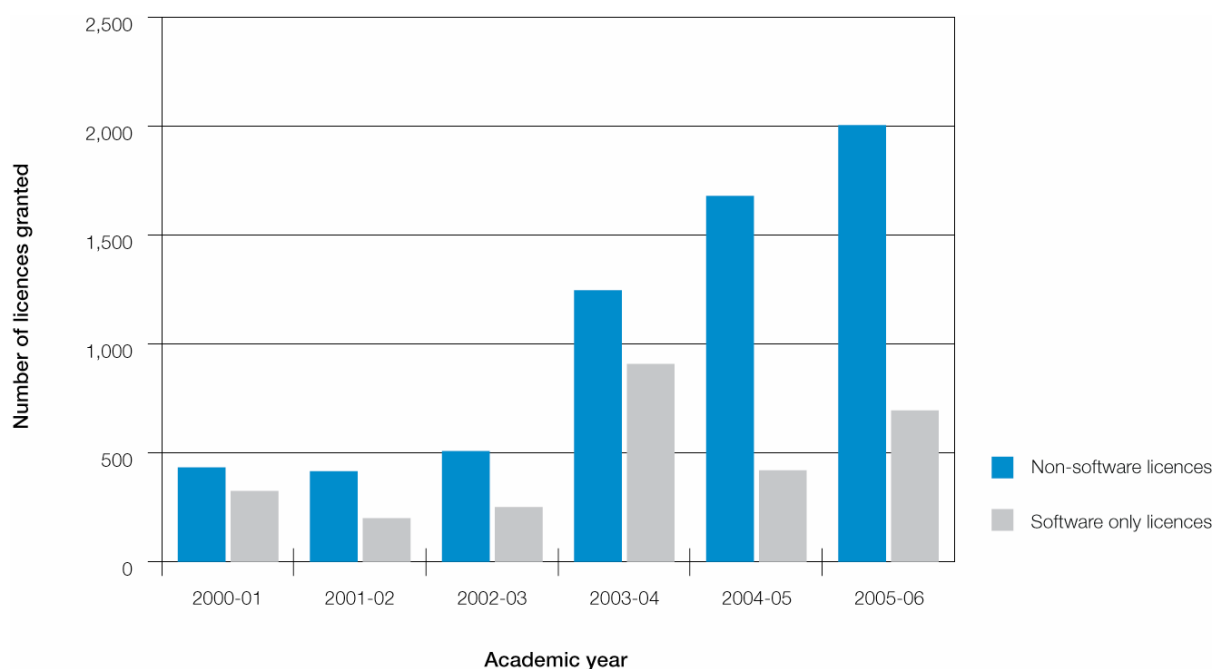
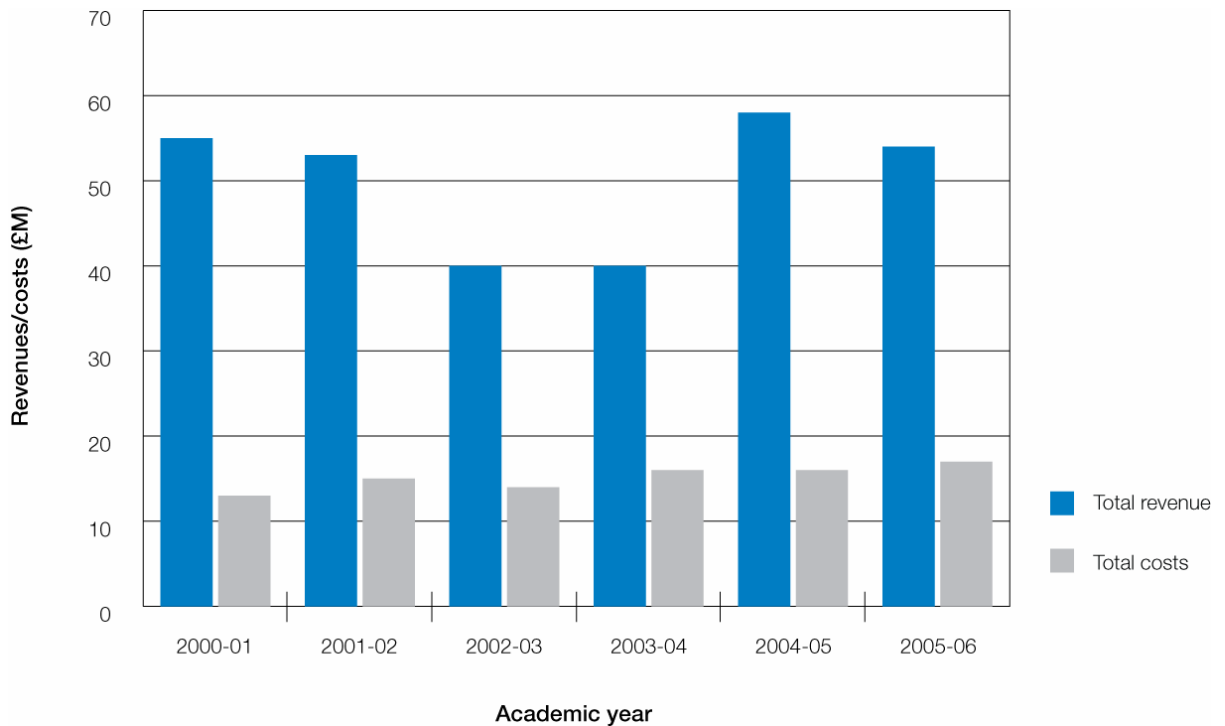


Figure 9: Total revenue and costs for HEIs' IP related activities [2005-06 prices] (HEFCE, 2007c:27)

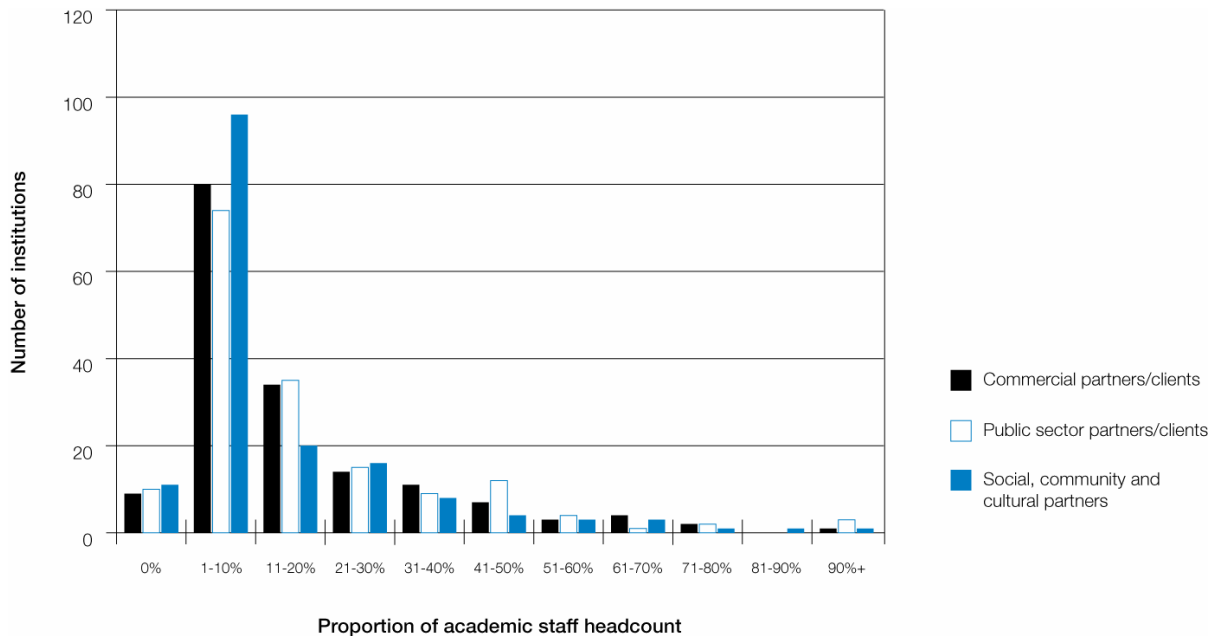


The reason for the different trajectory of the number of licences (*figure 8*) and that of IP income (*figure 9*), HEFCE (2007c) suggest, may be due to the difficulty that HEIs experience in capturing data on the exploitation of IP and ‘given the long timescales associated with achieving a financial return (profit) from IP’ (2007c:26). The substantial increase in the numbers of licences can be seen as a positive achievement that can be quantified. However, the income trend shown in *figure 9*, notwithstanding HEFCE’s explanation, does leave open the opportunity for potential criticism that there has been a degree of manipulation by HEIs in their data returns to HEFCE or that the IP work in question is often of low value.

When a higher education institution sells the shares of a successful spin-off company this ‘can be a particularly lucrative activity’ (ibid:27). The opportunity for such a ‘windfall’ may not occur until ‘10-15 years after the original and perhaps 5-10 years after the [spin-off] company itself was formed’ (ibid). HEFCE note that such opportunities do not present themselves very frequently, even to HEIs that have a strong research background, and it suggests that this situation ‘adds to the fluctuation of IP income’ (ibid). It is also noted that the ‘windfalls’ from the sale of spin-off company shares are often omitted from HE-BCI surveys in order that the analysis of the comparison between different years can be more ‘robust’ (ibid).

Figure 10 below provides an estimation by HEIs as to the proportion of their academic staff that are directly involved in *third stream* activities. It should be noted that data collection in this regard is not precise due to the difficulty in data capture and estimation when ‘there is such a diverse range of interactions taking place across departments and disciplines’ (HEFCE, 2007c:17). The staff in question are ‘mainstream’ academics and not specialist *third stream* recruits. This is a valuable indicator of the level of interaction by higher education institutions with business. The most frequent estimate by HEIs, of up to 10 per cent of mainstream academics, appears to be disappointing at this stage in the life-cycle of *third stream* policy. However, the next highest grouping, 11-20 percent of academic staff, represents the current position at over thirty-five HEIs. A similar proportion of HEIs record even greater percentages of academics engaged in *third stream* activities.

Figure 10: Academic staff directly involved in providing services to business and community partners (HEFCE, 2007c:18)



In this section of the thesis, 3.1, the tone of the government publications has generally been positive with regard to the achievements of UK higher education institutions engaged in *third stream* funded activities. Close examination, in particular, of the HEFCE Higher education-business and community interaction (HE-BCI) survey for 2004-05 and 2005-2006 (2007c) has been revealing in respect of the trends in *third stream* activities in the United Kingdom. HEFCE state that the HE-BCI report provides ‘invaluable intelligence for knowledge exchange practitioners and policy-makers alike’ (2007c:3). It should be noted however that there are substantial differences in the size and composition of the higher education institutions that have responded to HEFCE’s higher education – business and community interaction (HE-BCI) survey (2007c: Annexes

G and H). Capacity and income variances are significant between large universities and smaller institutions in the survey and, also, the results incorporate data from the returns of HEIs that are specialist providers. Both of these factors could distort the HE-BCI survey results, however, the reader should keep in mind that the purpose of this section of the thesis is to ascertain the Government's perception of HEIs' *third stream* performance and that any shortcomings in HEFCE's methodology is of less significance to this research; it is the priorities and interpretation of the results by HEFCE that inform this study.

As previously stated, the impression that is emerging is that the Government's HE funding body has formed a positive view of HEIs' *third stream* performance. Although the trends are to some degree encouraging, there appears to be little attempt by HEFCE to prioritise the relative worth of the different strands of *third stream* activity undertaken by HEIs. Whilst individual HEIs have the opportunity to indicate their economic development priorities (ibid:14), it is not clear, for example, whether an upward trend in HEIs being an enquiry point for SMEs is of more value to the United Kingdom Government than, say, the increase in formal collaborative research income. In short, even though HEFCE (2007e) states that the UK needs to 'capitalise on the major strengths of its research base' in order to create wealth' (the updated 2006-11 Strategic Plan, 2007e:38) one can question whether enough is done to prioritise this aspect of *third stream* funding. It appears from the HE-BCI survey report (2007c) that, despite the amount of funding that HE research receives, the actual exploitation of the research base is given no more prominence than, say, the income that HEIs receive from

consultancy in HEFCE's assessment of *third stream* performance. Examination of *figure 11* below taken from the HEFCE 2006-11 Strategic Plan (2007e), reveals the Key Performance Targets (KPTs) that are relevant to business and the community/*third stream* activities. It is interesting that although the United Kingdom Government extol the virtue of exploiting the research output of higher education institutions, it appears slow to establish 'SMART' targets (Specific; Measurable; Achievable; Reliable and Time-bound). As can be observed from *figure 11* below, the language used by the Higher Education Funding Council for England is less rigorous than using 'SMART' targets (see page 139) and includes terms such as *stakeholder acceptance, improvement, pilots, tracking* and *assessment*. It is clear that HEFCE prefers to *encourage* HEIs to support its *third stream* ambitions rather than *stipulate* outcomes from HEIs for the funding that they receive (HEFCE 2007e:58).

**Figure 11: Enhancing the contribution of HE to the economy and society
(HEFCE, 2007e:58)**

Key performance target	Measure
<p>KPT11: By 2007-08 to achieve wide stakeholder acceptance of the validity and relevance of a set of measures describing what is delivered by each HEI, and by the sector as a whole.</p>	<p>We will use data from the Higher Education Statistics Agency and the HE-Business and Community Interaction Survey. However, early in the plan period we will conduct a regulatory impact assessment to determine whether the burdens of data collection are proportionate to the benefits, in terms of demonstrating value for public funds and informing robust funding allocation systems. The regulatory impact exercise will include a survey of stakeholders' acceptance of measures.</p>
<p>KPT12: Throughout the period, to secure year-on-year increases in the total contributions (both direct contributions from users leveraged through HEFCE core funds for third stream, and support from a wider range of public sources to deliver public goods) for third stream activity in the HE sector.</p>	<p>Annual tracking of the level of total contributions for third stream activity in the HE sector.</p>
<p>KPT13: By 2007, to support up to 10 pilot projects to test methods of increasing targeted engagement with users, and by 2009-10 to reflect the results of the pilots in funding.</p>	<p>Number of pilots supported by 2007 and results of pilots reflected in funding in 2009-10.</p>
<p>KPT14: Throughout the period, to demonstrate year-on-year improvement in the impact of the HE sector on business and the community.</p>	<p>Assessment of trends in a 'basket' of relevant measures from the Higher Education Statistics Agency and the HE-Business and Community Interaction Survey. (See also the measure for KPT11.)</p>

A further HEFCE document concerning performance indicators is the Review of Performance Indicators report (HEFCE, 2007d). In this document the funding council lists six Sector Wealth-Generation Indicators that are relevant to the *third stream* agenda:

- Value of research projects commissioned by industry
- Value of research projects in collaboration with industry
- Value of consultancy projects commissioned by industry
- Turnover of higher education companies commercially exploiting research results
- Income from licences/options (not software) for HE institutions and companies
- Income from software for HE institutions and companies

(ibid:60)

HEFCE advice is that the performance indicators in the above report are intended to cover the next three or four years (ibid:20). These performance indicators have been subject to very modest adjustment from previous priorities (ibid:1) and the review group declare that they ‘have not considered any of the suggestions for indicators relating to knowledge transfer or business in the community, nor for new research indicators’ (ibid:20). Continuity is seen as desirable in order for comparisons to be made over a period of time. The review group state that work on measuring research and *third stream* funding is occurring elsewhere and that this enables this review group to ‘concentrate on indicators relating to teaching and learning’ (ibid:20). This is despite the wealth creation indicators that have been identified (ibid:60). It seems likely then that there are no immediate plans for higher education institutions to face

more rigorous measures of their performance in *third stream* funded areas of activity by HEFCE.

A more detailed analysis of potential *third stream* indicators is provided by SPRU (Science and Technology Policy Research) (2002) who use SMART (Specific, Measurable, Achievable, Reliable and Time-bound) metrics in the design of the indicators (2002:iv). Kermally (1996) also advocates the use of SMART as a performance measure and maintains that this tool provides clear objectives for the deliverer as well as clarity as to what is expected (1996:197). By applying SMART performance measures to the *third stream* agenda, the Government could provide a focus for the HEI, as policy-implementer, which could then lead to the cascading of the *third stream* objectives down to the ultimate service deliverer; usually the academic. The objectives for individuals, Kermally suggests, should invite the questions: *What is expected of me? How am I doing? How can I improve? What is my reward? Where do I go from here?* (ibid). These questions are relevant to the interviews conducted at the three host HEIs and detailed in chapter 5 of this thesis. McCaffery (2004) is also a supporter of establishing SMART objectives and is of the view that they are a requirement for monitoring ‘collective activity’ (2004:88). McCaffery, citing Rose (2000), states that a common mistake is to ‘set goals that are either too high or too low’ and he advises that these objectives should be developed ‘in such a way as they are not DUMB – *defective, unrealistic, misdirected* and, perhaps worst of all, simply *bureaucratic*’ (ibid). The UK Department of Transport (2009) is already committed to SMART indicators and it emphasises the need for achievable and realistic targets and recommends ‘that whilst being

challenging, the targets are grounded in reality' (2009:1). The researcher of this study is attracted to the use of SMART metrics in *third stream* policy due to the complexity and ambiguity of policy-making and because of the view of commentators (see chapter 1 of this thesis) that policy does not always emerge as intended. Part of this problem could be poor target setting and SMART performance indicators are therefore of interest to this research as the field of study is concerned with the adoption and implementation of *third stream* activities. Also, the exploitation of IP (intellectual property), a central element of *third stream* policy (see chapter 2 of this thesis), for example the number of spin-outs or licensing agreements, lend themselves to SMART performance indicators.

The output of *third stream* funded activities by higher education institutions, SPRU (2002) asserts, extends beyond commercialisation and collaboration with the private sector (2002:iv). SPRU recognise the importance of universities to 'government and civil society... [in] helping to improve the quality of life and the effectiveness of public services'. SPRU takes the view that any HEI which pursues '*third stream* activities that focuses purely on university commercial activities is likely to miss the big picture' (ibid). Hatakenaka (2005) takes a similar position and she states that although the previous focus by most OECD members upon 'specific activities such as spinouts and licensing was an important starting point'; she emphasises that 'it is important to go beyond such activities'. Hatakenaka suggests that patenting is not the only way for technology transfer to occur and that 'open access to innovations' may 'provide the greater benefit to society' and she raises the issue of *third*

stream activities becoming ‘more embedded in teaching and learning’ (2005:11). This sentiment is echoed by the IRUA (Innovative Research Universities Australia) (2005) which is drawing upon UK *third stream* performance indicators in its quest to refine funding processes for *third stream* activities at Australian universities (2005:5). IRUA argue that the third mission ‘is much broader than commercialisation’ (ibid:3). Going further, the IRUA expresses the view that ‘the main purpose of *third stream* funding is to recognise the value and cost of what universities can and do offer that is not likely to have commercial potential’ (ibid:4). The IRUA emphasises that, in the United Kingdom, the business and community strand of funding of higher education is enabling HEIs to make ‘a significant and measurable contribution, through knowledge transfer and related activities, to economic development and the strength of communities’ (ibid).

It is clear from the contributions, above, by SPRU (2002), Hatakenaka (2005) and the Innovative Research Universities Australia (2005) that *third stream* is seen to have a broader meaning than merely being concerned with income generation. These observations raise the question as to what wealth creation actually is. In economic terms, wealth creation is generally associated with the success of commercial organisations (usually private sector) resulting in an increased productivity, jobs and GDP (gross domestic product) (Gray, 1999). Are ‘community benefits’ to be an example of wealth creation? The number of *third stream* indicators considered by SPRU (2002) exceeded sixty, including a number of HEFCE indicators, and the final number of selected indicators is thirty-four (see Appendix D for the full list of SPRU’s selected

indicators). The indicators are all compatible with the SMART metrics mentioned above, and they have been grouped into twelve categories ranging from *technology commercialisation* (such as the number of patent applications made or royalty income) through to *non-academic dissemination* (such as the number of times that academic staff are mentioned in broadsheets) (2002:67). The SPRU framework starts with a ‘basic distinction’ between higher education institutions *capabilities* (knowledge and physical facilities) and the *activities* that they engage in (teach, research and communicate the results) (ibid:v). A particular advantage of SPRU’s work on *third stream* indicators is that each potential indicator is individually analysed for both strengths and weaknesses. An illustration is, as an example, for the *number of licences granted*:

Strengths - ‘reflects demand for innovations generated at universities’

Weaknesses - ‘does not discriminate among licences; despite the knowledge that some licences generate more income than others’ (ibid:68)

This analytical approach has the benefit of demonstrating the limitations of the application of a particular *third stream* indicator to stakeholders, whether that be policy maker, funding body or higher education institution. The SPRU (2002) report provides a comprehensive set of conclusions and three salient examples are quoted below:

Use a variety of indicators

‘There are no magic bullets in indicators of third stream activities. A variety of indicators need to be collected. Each of them will, by itself, be incomplete and its interpretation will be open to questioning. Yet when taken together, the result can be a powerful measurement system’

Existing indicators are not enough

‘The current set of measures used to assess the activities in the university system cannot deal with the full extent of third stream interactions. A new conceptual framework is necessary that focuses on the wide range of different interactions that bind universities to the rest of society’

Commercialisation indicators are not enough

‘Indicators of university commercialisation are not a sufficient guide for third stream policy. Commercial activities are heavily concentrated in particular disciplines and the returns to commercial activities are highly skewed. On their own, commercialisation indicators are a poor reflection of the overall economic and social benefits of the university sector’

(2002:60)

It is apparent that, although the SPRU report proposes a more rigorous SMART target approach to *third stream* indicators than HEFCE, SPRU does share a similar approach to the funding council in that it rejects any suggestion of having a single dominant category of indicator; preferring instead to have an inclusive list of diverse indicators. This stance is held despite the ambition of the UK government and HEFCE to encourage wealth creation; a position which would suggest that indicators should

skew towards commercialisation. If one accepts that there is a strong case that commercialisation related indicators should not be the key *third stream* indicators; then perhaps the positive messages emanating from HEFCE of *third stream* performance by HEIs, and discussed in this section of the thesis, may be justified.

Having examined in some detail the United Kingdom Government's perception of *third stream* performance via the indicators administered by the Higher Education Funding Council for England, and observations from other influential commentators; the next section of this chapter, 3.2, focuses upon the government commissioned Lambert Review of Business-University Collaboration ['Lambert Review'] (2003b). In 3.2, the *third stream* indicators provided by HEFCE (2007c), and the observations drawn both from the SPRU (2002) report on Measuring Third Stream Activities and other commentators, are compared to the conclusions that are arrived at by the Lambert Review; the most dedicated 'independent' review of HE – business collaboration conducted during the Labour Administration.

Lambert Review of Business-University Collaboration

3.2 Richard Lambert (2003a); in a letter to business organisations, higher education institutions, research councils, professional bodies, government departments and agencies; invited the recipients to suggest 'ways of improving the relationship between business and the universities' (2003a:1). Lambert's letter (2003a) advised the various organisations that 'the main focus of the review is going to be on the demand side – the needs of companies'. These needs, it was suggested,

might include research and development, technology transfer, graduate recruitment and graduate skills set (ibid). Lambert also informed the recipients of the letter that he would be looking at ‘the effectiveness of various Government schemes in this area’; an example being R&D tax credits. The views of business were also elicited on the effectiveness of university management and governance in respect of the support for research and the transfer of technology (ibid).

The initial consultation phase of the Lambert Review project time table was allocated a two months period and, after analysis and identification of emerging findings, there was a re-consultation phase to test emerging findings with key stakeholders prior to the formulation of the review recommendations and submission of the final report to Government. The sponsoring Government Departments were HM Treasury, DTI and DfES (ibid 4). Although contributors to the consultation process were encouraged to disclose their own ideas; they were invited to respond to four groups of questions that Lambert had provided in order stimulate thought on the matter. The Four Questions for Consultation, listed below, were each underpinned by sub-set questions or examples to consider and *these are shown in italics* following each main question:

Q1. We would like to identify best practice and examples of excellence in business-university collaboration in the UK and abroad.

Topics of interest for Lambert regarding this question include: - information dissemination, patents and prototypes, HE-business joint-ventures, collaborative research and development, informal contacts such

as conferences and use of science parks and, finally, formal contracts such as spin-out companies.

Q2. If you do not have, or would like to strengthen such relationships, what are the main barriers to doing so?

Topics of interest for Lambert regarding this question include:- management and organisation of shared resources; priority setting, decision-making funding in HE and their effect on collaboration; barriers to technology transfer; appropriateness of arrangements for intellectual property.

Q3. How can business attract the best graduates and postgraduates with the skills that they require, especially technology?

Topics of interest for Lambert regarding this question include:- quality of graduate recruits; gaps in skills and disciplines; channels of communication for business to raise with HEIs the need for specific scientific or technical skills; making careers in science and technology more attractive; how to improve HE-business dialogue to ensure that business attracts the best talent.

Q4. Do financial considerations currently help or hinder the relationships between business and universities?

Topics of interest for Lambert regarding this question include:- what ways could existing financing arrangements be made more effective; the

influence of research and development tax credits and its impact on business demands for research and skills; alternatives to R&D tax credits.

(ibid:3)

The areas covered by this review of business-university collaboration overlap in many ways with the themes that are found in HEFCE's own HE-business and community interaction survey (2007c). A significant difference between the two reports is that Lambert has solicited the views of business and other stakeholders; as well as that of higher education institutions. Lamberts' terms of reference contain an international dimension as well as 'national, regional and local impacts of business-university interactions, including how Regional Development Agencies and Sector Skills can best support such interactions' (Lambert, 2003b:117). The full terms of reference for the Lambert Review can be found in Appendix C of this thesis.

In the foreword to his report, Lambert (2003b) advises the Chancellor of the Exchequer that 'compared with other countries, British business is not research intensive, and its record of investment in R&D in recent years has been unimpressive'. A central problem, Lambert identifies, is that research in commercial companies in the United Kingdom is restricted to a small number of industrial sectors and is concentrated in 'a small number of large companies' (2003b:1). Lambert, however, remains optimistic and suggests that the strong economic performance of the United Kingdom 'will improve the climate for business investment of all kinds' (ibid). Lambert states that in the UK science is strong and he notes

that government funding of science ‘is increasing in real terms’. The research and development tax credit is singled out as ‘an important new incentive for business investment’. One impact of the strength of public spending on science in the UK, and changing patterns in business organisation and location, is the growth in new science-based companies that frequently group in the locality of a university (ibid). This phenomenon, Lambert argues, encourages collaboration between business and the higher education sector; however, he concludes that despite the ‘good collaboration work underway already, there is more to be done’ (ibid:2). It is also suggested that business needs to understand how to exploit the innovative work being undertaken by UK universities (ibid).

The Lambert Review of Business-University Collaboration makes a number of recommendations ranging from *the funding of university research* through to the *employability of graduates and postgraduates*. Due to the breadth of recommendations made by Lambert, particular focus is given below to those recommendations listed within the *intellectual property and technology transfer [IPTT]* category as this area relates most closely to *third stream* funded activities as discussed in chapter 2 of this thesis. The headline IPTT recommendations are as follows:

R1. The Funding Councils and Research Councils, in consultation with universities, the CBI and other industry groups, should agree a protocol for the ownership of IP in research collaborations.

R2. The Government should use *third stream* funding to support regional shared services in technology transfer.

R3. The Government should increase the level of funding for technology transfer and knowledge transfer training to stimulate the development of new training courses.

R4. As *third stream* funding increases, university technology transfer offices should actively seek to attract individuals with industry background and experience.

R.5 UK organisations representing technology transfer should look to the US Association of University Technology Managers to see what lessons can be learnt in terms of providing quality training, increasing industry involvement and sharing best practice.

R6. The government should set clear guidelines for *third stream* funding to rebalance commercialisation activities towards licensing.

(2003b:122)

A number of points underpin each of the headline recommendations in Lambert's (2003b) report and a selection of the salient points from the *intellectual property and technology transfer* section of the summary of recommendations follow: In R1 it is suggested that intellectual property (IP) that results from research collaboration with industry should be owned by universities, with the opportunity for industry to negotiate a licensing agreement, unless 'industry makes a significant contribution

[then] it could own the IP' (ibid:123). With regard to R2, there are several additional points made as to the use of *third stream* funding; universities in each region should work together to offer shared *third stream* services with each contributor having a defined role; financial incentives should be provided 'to create shared services in technology transfer' and 'the most research-intensive universities should be involved where possible to build on existing expertise'. Perhaps controversially, to promote collaboration, Lambert recommends that less research-intensive universities should have a reduction in funding for specialist in-house expertise (ibid). Underpinning Recommendation 6, Lambert suggests that there should be funding for 'proof of concept'; this being special funds 'to establish whether a new technology is commercially viable or not'. 'Proof of concept' funding is the initial stage in the transfer of intellectual property to commercialisation and is necessary to enable both licensing and spin-out to occur. Also, with regard to R1, the recommendation is that private funding should be used where it is available and that government seed funding should be reserved for the best of the spin-outs that cannot attract private funding (ibid:124).

In the category of intellectual property and technology transfer (IPTT), the Lambert Review (2003b) adds to the debate as to what the central purpose of *third stream* funding is; income generation or serving broader social aims? Lambert suggests that 'even the most successful US universities tend to generate only small amounts of money from their *third stream* activities' and, it is reported by Lambert, that most of these universities 'acknowledge that their reason for engaging in technology transfer is to serve the public good' (2003b:4). This observation that

third stream activities goes beyond commercialisation mirrors the views, as previously discussed in section 3.1 of this thesis, of SPRU (Science and Technology Research, 2002), IRUA (Innovative Research Universities Australia, 2005) and Hatakenaka (2005). As far as intellectual property (IP) is concerned, Lambert (2003b) argues for maximum flexibility in decisions regarding the allocation between business and universities of intellectual property rights. Observing the issue of the legal rights of universities to ownership of IP in the United States, Lambert recommends that the UK should not follow the example of the United States and resist any pressure for the introduction of ‘legislation giving ownership of IP [by right] to universities along the lines of the Bayh-Dole Act in the US’ (2003b:5). The experience of *third stream* policy in the United States, including the Bayh-Dole Act, is explored in chapter 2 of this thesis where the benefits to universities, such as patent rights, are discussed.

The Lambert Review of Business-University Collaboration (2003b) concludes its recommendations on intellectual property and technology transfer (IPTT) by suggesting that ‘there has been too much emphasis on developing university spin-outs’. The view expressed by the Review is that a significant number of university spin-out companies may prove to be unsustainable and that the emphasis should be towards licensing technology to industry (ibid). Concerns about the performance of university spin-out companies are not unique to Lambert and in 2002 Hague and Oakley produced a report for CVCP (Committee of Vice-Chancellors and Principals) entitled ‘Spin-offs and Start-ups in UK Universities’ that expresses reservations about the success of spin-offs

(spin-outs). Hague and Oakley (2000), commenting on the exploitation of university discoveries, state that ‘the economics of exploitation are challenging’ and they conclude that the ability ‘to engage economically in the commercialisation of research’ is only viable were a university has a substantial budget for research (2000:34). An alternative, Hague and Oakley (2000) suggest, is for universities to work in consortia or for less research-intensive universities to access a ‘national fund’ to enable the exploitation of ‘specific discoveries’ (ibid). Hague and Oakley argue that it is not essential for all ‘exploitable research... to be “world class” science’; although, they comment, ‘most will be’ (ibid). A further suggestion is that, for successful exploitation of research, it is essential that HEIs engage creative researchers with ‘an eye for commercial opportunity’ (ibid). This report, issued by CVCP, notes the high attrition rate for research discoveries on the journey to successful licensing or spin-out companies and emphasises that ‘the proportion of spin-offs that are very successful is also very small’ (ibid). Commenting on the exploitation of university research for commercial purposes in the United States, Hague and Oakley report that evidence shows that a research-intensive university is likely to achieve as few as 3 or 4 spin-outs from ‘say 70 to 100 promising discoveries a year’. Even after this process of attrition, the success of a spin-out is not guaranteed and the US experience leads Hague and Oakley to conclude that as few as 20 or 30 UK universities have the capacity that is required to achieve commercialisation that is cost-effective (ibid:5).

Following the Lambert Review (2003b), Wright (2004b) focuses upon Lambert’s comments on the shortcomings of spin-outs, and notes that

‘recent Government policy has encouraged universities to commercialise their intellectual property by launching entrepreneurial spin-outs’ (2004b:1). Wright (2004b), concurring with the conclusions in the Lambert Review report (2003b), acknowledges the potential for wealth creation by the commercialisation of university research. Also, Wright is in agreement with Lambert regarding spin-out success rates and states that ‘in practice there is plenty of room for improvement’ (2004b:1). The major thrust of Wright’s views on the shortcomings of university spin-outs is that the central problem for universities is that the spin-outs frequently do not have the capability or financial resource to succeed (Wright *et al*, 2004a; Wright, 2004b; Wright, 2004c; Wright *et al*, 2004d). Specifically, Wright *et al* (2004d) state that ‘spin-outs typically lack the financial means and managerial expertise to acquire the resources and develop the capabilities they need in order to fully exploit the commercial potential of their technologies’ (2004d:287). Forming a university-business partnership, Wright *et al* argue, is a possible solution to the potential problems associated with capabilities and financial weaknesses (*ibid*). In terms of policy implications for spin-outs Wright *et al*, noting the ‘heterogeneity of spin-outs’, suggest that ‘policy measures need to be more sophisticated than simple one-size fits all support’. A significant policy issue, Wright *et al* suggest, is how the different objectives of those involved in university spin-out companies can be reconciled; that is universities and their academic departments and staff; academic entrepreneurs and the actual spin-out companies (*ibid*:245).

A major criticism of UK universities can be found in an Economic and Social Research Council (2004) research briefing (citing Wright, 2004c),

in relation to spin-outs, where it is argued that HEIs ‘tend to focus on creating businesses *per se* rather than creating wealth’ (ESRC, 2004:1). The Research Council argues that the success of university spin-outs should be measured by the achievement of ‘successful technology transfer outcomes’ and not merely the quantity of spin-out companies that have been formed (ibid). An example of the successful commercialisation of intellectual property at a United Kingdom university, benefiting from government *third stream* funding, is provided by Kirby (2006). The institution in question is the University of Surrey which in 1986 established a £70m science park; The Surrey Research Park. Kirby (2006) states that the science park has, ‘since its inception, ...contributed significantly to the economic development of the region and to technology transfer, as well as fostering innovation’ (2006:601). Focusing upon the academic year 2000–2001, Kirby reports that Surrey University formed six spin-out companies and negotiated ‘fourteen licence deals, providing £120,000 of revenue and the potential for future royalties’ (ibid). Kirby’s (2006) figures differ from the University’s submission to the Lambert Review (Surrey University, 2003) where the University reports that the creation of a new infrastructure, designed to support the knowledge transfer process, has resulted in ‘significant recent rises in the number of technology disclosures (15 in 2000/1, 32 in 2001/2), patent applications (14 in 2000/1, 19 in 2001/2), licensing deals (5 in 2000/1, 22 in 2001/2), [and] spin out company formations (none in 2000/1, 3 in 2001/2)’ (2003:9). Either set of data, Kirby’s (2006) or Surrey University’s (2003), reveals a significant engagement in *third stream* activities when comparing Surrey University’s record on the

commercialisation of university research with the submissions of several other UK universities to the Lambert Review (2003b).

Kirby (2006) reports that Surrey University has successfully drawn down government funding from the Higher Education Innovation Fund and has employed specialist managers ‘to identify commercially exploitable intellectual property within the University and the region’ (2006:601). Details are also provided by Kirby (2006) of Surrey University’s success in securing *third stream* funding to support its collaborative partnerships with other HEIs and to contribute to the University’s own venture capital fund which ‘provides “stimulus funding” of up to £30,000 for proof of concept [and] market studies etc’ (ibid:602). It is difficult for the author of this thesis to determine whether £120,000 is a suitable initial return to the University for the undoubted level of resource and effort that the organisation will have put into the basic research that provided the foundation for the creation of six spin-outs and the completion of fourteen licensing deals in the one academic year. Kirby concludes that although a great deal has been achieved at Surrey University in terms of the commercialisation of intellectual property and innovation, ‘there is more still to be done’ (ibid). Kirby (2006) emphasises that ‘a culture of enterprise is required that both encourages and enables academics and students to commercialise their intellectual property and inventions’. The final conclusion that Kirby arrives at, in respect of *third stream* activities, is that entrepreneurial behaviour should permeate universities and become ‘an integral part of their missions’ (ibid:603).

One significant factor in the apparent cooperation by academics to engage in *third stream* activities at Surrey University may be the policy at Surrey University of ‘sharing net revenues with the academic inventor’. These rewards, that go to academics, are paid on a sliding scale with the inventor receiving 70 per cent of the first £50,000, reducing ‘down to 35 percent on net revenues in excess of £500,000’ (ibid:601). Payment schemes such as this one, to reward academics for participating in university commercial projects, will, of course, intensify the concerns of those commentators who believe that such activities divert resources from, what they see as the central role of universities, that is, basic research and teaching. Alternatively, as discussed in chapter 2 of this thesis, there is a view that *third stream* activities can enrich teaching. Whatever position one takes on the issue of the payment of incentives for academic staff engaged in technology transfer activities, it is reasonable to assume, given the outcomes at Surrey University, that profit sharing for academics has had a positive impact on their willingness to embrace *third stream* funded activities.

In its thirty-four page submission to the Lambert Review of Business-University Collaboration, Surrey University (2003) claims that it ‘has an enviable record for enterprise’ and offers ‘the establishment of the now world class renowned Surrey Satellite Technology Ltd, a University company in which it has a 95% interest’, as an example of the success of the University’s science park (2003:2). Despite the success of Surrey Satellite Technology Ltd, the University acknowledges that ‘prior to *circa* 2000, companies established by the University or its staff remained too closely associated and dependent on the Institution’ (ibid:9). As a

consequence, apart from a few exceptions, Surrey Satellite Technology being the most noteworthy, the University reports that spin-out companies 'were generally financially unsuccessful' (ibid). In the new millennium, Surrey University made several key changes to the intellectual property exploitation process at the Institution including; pre-incorporation support, installing professional management and adopting an arms length relationship with spin-out companies (ibid). The new policy, the University reports in its submission to the Lambert Review (2003b), involves the Institution taking a minority stake in spin-out companies. Surrey University (2003) recognises that, due to this investment policy, it may not receive an adequate overall return for the resource input that it is making to the arms-length spin-outs, however, the University claims that the new arrangements are 'leading to a real culture change in the academic community which increasingly sees the potential of exploiting its intellectual property' (2003:9). The use of more business minded professional managers, who can operate spin-out companies on an arms length basis, is consistent with the recommendations of the Lambert Review of Business-University Collaboration (2003b).

Up to this point, this chapter of the thesis has identified several performance indicators that are relevant to the Government's *third stream* policy agenda via close scrutiny of HEFCE policy documents covering the period 2000/01 through to 2005/06. Against the HEFCE indicators, the researcher of this thesis has contrasted the views of other influential contributors to the debate surrounding the significance of a number of components of *third stream* policy such as *knowledge and technology transfer*, *wealth creation* and the *commercial exploitation of academic*

and collaborative research by UK higher education institutions. Major contributions to the *third stream* policy dialogue by bodies such as SPRU (Science and Technology Policy Research), the Lambert Review group and CVCP (Committee of Vice-Chancellors and Principals; now Universities UK) have been explored. Close examination of the documentation produced by the above parties, applying the discourse analysis expounded by Ball (1993), reveals that a common pattern has emerged across the range of reports and policy documents studied. The most significant components of this emergent pattern are as follows:

- Knowledge and technology transfer
- The exploitation of IP (intellectual property) and its ownership
- Licensing agreements and university spin-out companies
- Collaborative research between universities and business
- University partnerships and shared *third stream* support services/infrastructure
- Support for SMEs (small and medium enterprises)
- Consultancy services by HEIs
- Graduate and post-graduate skills sets (including technical and entrepreneurship)

The above *third stream* activities are also consistent with the most important areas of higher education that are deemed by HEIs to be the greatest contributors to economic development. This includes, as identified in section 3.1 of this chapter of the thesis, *access to education, research collaboration with industry, technology transfer, meeting regional skills needs and supporting SMEs* (HEFCE, 2007c14). There is

also an apparent compatibility with the statement in 1998 (see section 3.1 of this chapter) by the then Secretary of State for Trade and Industry extolling the benefits of the ‘profitable exploitation’ of knowledge by business and recognition that this is ‘key to competitiveness’ (DTI, December 1998). However, it is interesting to compare the use of the words ‘profitable’ and ‘competitiveness’ in the statement by the Secretary of State with the view expressed by Lambert (2003b), and others, earlier in this chapter of the thesis, regarding the broader social aims of the *third stream* policy area. It will also be interesting to observe the extent to which the terms identified by discourse analysis of government documents, such as “competitiveness” and “wealth creation” are raised by academic interviewees which are detailed in chapter 5 of this thesis. In particular, with reference to intellectual property and the creation of spin-out companies, is there an inconsistency between the specific aim of government to pursue wealth creation by exploiting knowledge? Is the term ‘exploitation’, which has been widely quoted throughout this thesis in the context of commercialisation of university research being taken figuratively rather than literally? Ultimately, to what degree is the UK Government really prepared to pressure HEIs, through funding incentives, to bring research successes to the market? Does the Government have the desire to adopt such a policy stance?

It would appear, from the government publications examined in this study, that there is little evidence of any determination by the Government at the present time to press for the maximisation of the commercialisation of intellectual property by HEIs. In fact, the results of analysis of the documentation considered in this study leans towards the

proposition that the UK Government is comfortable with existing levels of HEI's *third stream* performance. This may be due to the aims of Government *third stream* policy being too modest regarding the commercialisation of university research and the benchmark for the exploitation of intellectual property by universities may be too low. Of course, as discussed in chapter 2 of this thesis, many commentators would disagree with this statement and would wish to discourage any significant movement from the traditional core themes of UK higher education, that is, teaching and research. HEFCE (2006a) is discussing with stakeholders its intention to use *third stream* funding to 'reward outcomes/impact rather than capacity' from 2008 and in 'response to specific public priorities' (2006:14). We await the specifics of what the intended 'outcomes/impact' are, and whether they involve SMART targets, as discussed in 3.2 above, or have a commercial focus.

To conclude this section (3.2), focusing upon the Government commissioned Lambert Review of Business-University Collaboration (2003b) and its contribution to the debate raised in this thesis as to the impact of UK Government *third stream* policy, it is worth noting the Government and HEFCE's reaction to Lambert. The Higher Education Funding Council for England (2007e) has confirmed its intention to 'continue and support collaboration – between HEIs, as well as between HE and users of knowledge, employers and other stakeholders – as an intrinsic feature of *third stream* activity' (HEFCE, 2007e:40). The partnerships between higher and further education, particularly, are identified as being increasingly important. HEFCE (ibid) states that the United Kingdom faces a number of difficult economic challenges and,

although the funding council will provide funding for higher education institutions to contribute towards the necessary solutions, it agrees that ‘the HE sector can only do so much, and users of knowledge and employers themselves have a critical role to play’ (ibid). Commenting on Lambert’s (2003b) focus on the need for the stimulation of demand for innovation by the users of innovation; HEFCE (2007e) declares that it has a ‘limited role in relation to demand’, however, it affirms that it will work with partners who are able to address this perceived need (ibid). In response to Lambert’s recommendation that there should be greater support for SMEs (small and medium enterprises) and new sectors, ‘particularly regionally and locally’, by the higher education sector; HEFCE (2007e) acknowledges that it may have to commit to ‘targeted investment’ to promote ‘a targeted regional, user/employer driven “*third stream* intensive mission”, which can draw in enterprises that are unfamiliar with what HE can offer them’. Working with regional and local partners such as RDAs (Regional Development Agencies) is seen by HEFCE as being critical (2007e:37). Although HEFCE’s words appear accommodating, they fall short of providing a comprehensive endorsement of the Lambert Review’s (2003b) conclusions and recommendations. As for the Government’s response to Lambert (2003b), the Chancellor of the Exchequer proclaims that ‘at their best, businesses and universities in the UK produce world-class results’ and the Secretary of State for Education and Skills expressed the view that ‘our universities are a major national economic asset’ (HM Treasury, 2003:1). Both the Chancellor and the Secretary of State focused upon the Government’s increasing funding of the research base in universities. The inference is that Government is already, to a degree, taking the

appropriate steps in terms of the funding of the fundamental research that is necessary for the creation of intellectual property (IP) that precedes successful commercialisation (ibid).

The next section of this chapter, 3.3 below, concentrates on the intentions of policy-makers by identifying commonality or divergence, contradictions and omissions in the text of a range of published government policy documents that are relevant to the *third stream* funded activities of higher education institutions. This method, used to unpick the complexity of policy issues, is that expounded by Ball (1994) and has been discussed earlier in this thesis in chapter 1 as well as in chapter 4. The policy documents that have been selected for scrutiny have been chosen because they are broadly representative of government policy measures that impact on the major components of *third stream* that have been identified in the literature review, including Government publications, considered in this study. Specifically, UK Government policy publications that are pertinent to the salient *third stream* components of *innovation and research, knowledge and technology transfer, and skills* are exposed to Ball's (1994) model of policy as text and discourse.

Policy as Text and Discourse

3.3 In chapter 1 and chapter 3 of this thesis there is an examination of the value and application of Ball's (1994) method for analysing government policy to identify the intention of policy-makers. The following quote provides an insight into Ball's (1994) view of the reality of policy-making and policy-implementation:

‘Policy is both text and action, words and deeds, it is what is enacted as well as what is intended. Policies are always incomplete insofar as they relate to or map on to the “wild profusion” of local practice. Policies are crude and simple. Practice is sophisticated, contingent, complex and unstable’ (1994:10).

Trowler (2001) adds clarity to the text and discourse model by defining ‘text’ as ‘the written, spoken or visual product of communicative intent’ and by explaining that ‘discourse’ can be defined as ‘a stretch of spoken or written language and language in use’ (2001:186). Citing Gee *et al* (1996), Trowler (2001) notes that this definition may be ‘limited’ and that an alternative definition, using the term ‘discourse’ in a wider ranging form, ‘appears to be used synonymously with “ideology”, or even “culture”’ (2001:186). Trowler (*ibid*) is emphatic that ‘there is no text without discourse and no discourse without text: discourse is articulated in text’. In addition, Trowler declares that ‘what is absent from the text is often at least as important as what is present, and what is implicit in the text can be at least as important as what is explicit’ (*ibid*).

In this study five Government documents, and a report of a Government commissioned review, have been selected for analysis using Ball’s (1994) model. The purpose of applying discourse analysis method to these Government publications is, firstly, to explore the complexity of policy; secondly, to identify the intention of government and; finally, to provide a comparison of significant words identified in the specimen policy documents with the responses obtained from interviewees. The policy documents are listed below:

[D1] *The Future of Higher Education* (DfES White Paper, 2003)

[D2] *The Leitch Review of Skills: Prosperity for all in the global economy – world class skills* (a Government commissioned report) (Leitch, 2006)

[D3] *World Class Skills: Implementing the Leitch Review of Skills in England* (DIUS, 2007)

[D4] *HEFCE Strategic Plan 2006-11* (HEFCE, Updated April 2007e)

[D5] *Innovation Nation* (DIUS White Paper, 2008a)

[D6] *Implementing “The Race to the Top” Lord Sainsbury’s Review of Government’s Science and Innovation Policies* (DIUS, 2008b)

It is intended that the analysis of these important policy documents, which are relevant to the *third stream* agenda, will contribute a degree of illumination as to what the United Kingdom Government’s intended direction and purpose is in respect of this strand of HEI funded activity.

Accepting that a ‘skills’ orientated government publication will obviously focus upon skills and, similarly, a policy document relating to ‘innovation’ will mainly centre upon that topic; it is interesting to explore the selected documents named above to identify key words and themes, outside the *raison d’etre* for the individual policy document, that are

repeated across the range of documents. The words ‘skills’ and ‘innovation’ are frequently found across a range of UK government policy documents; however, commonality can also be found in the use of several other significant words including the following:

- Wealth creation
- Productivity
- Global economy
- Competition/competitiveness
- University – business/industry links [collaboration]
- Partnerships [with other HEIs/international/commercial organisations/voluntary and community sector]

There is also a high level of agreement, in the policy documents being scrutinised, that the quality of the United Kingdom higher education institutions is of a high standing and that, at a number of UK universities, they are engaged in ‘*world class*’ teaching and research. The Times Higher Education and Quacquarelli Symonds (THE and QS) *World University Rankings 2008* list twenty-nine United Kingdom universities in the top 200; four of which are judged to be in the world top ten.

The major theme that has emerged from the study of the selected government policy documents is an economic one; set in the context of a competitive global economy where increased productivity and wealth creation are paramount. This viewpoint can be illustrated by observing the following extracts from the six policy documents being considered:

[D1]

In the foreword to the HE White Paper, *The Future of Higher Education*, the Secretary of State for Education and Skills stated that *'we have to make better progress in harnessing knowledge to wealth creation'* (DfES, 2003:2). Other quotations from the White Paper, which are relevant to the identified theme, include; *'our higher education system is a great asset... the skills, creativity, and research developed through higher education are a major success in creating jobs and in our prosperity'*; *'universities need stronger links with business and economy'* (ibid:4); *'there is growing competition [in research] from other countries'* (ibid:13); *'research lays the long-term foundations for innovation, which is central to improved growth, productivity and quality of life'* (ibid:23); and, finally, *'in a knowledge-based economy both our economic competitiveness and improvements in our quality of life depend on the effectiveness of knowledge sharing between business and higher education'* (ibid:36).

[D2]

Lord Leitch, in his foreword to the Leitch Review of Skills (2006), when commenting on releasing the potential of UK people, states that *'the prize for our country will be enormous – higher productivity, the creation of wealth and social justice'* (2006:1). Leitch reports that he was asked by the UK Government to review the development of skills *'in order to maximise economic prosperity, productivity and to improve social justice'* (ibid) Also, Leitch states; *'demographic, technical and global changes present enormous challenges and brilliant opportunities'* and

that ‘*competitive pressures on all sectors of the economy are increasing*’ (ibid). Leitch, in his foreword, highlights higher education as a strength and reports that the UK has ‘*an excellent higher education system*’ (ibid).

[D3]

World Class Skills (DIUS, 2007) is the Government’s response to the Leitch Review of Skills (2006) and the language used is similar to that found in Leitch; ‘*translating more of the UK’s world-class research and develop ability into world-class businesses and jobs*’ and ‘*in our rapidly changing world, having a highly-skilled workforce isn’t an optional extra; its an economic necessity*’ (2007:4); ‘*the right culture for skills and employment isn’t just about being able to compete in the global economy. It’s also the most effective way of... increasing social mobility*’ (ibid). However, ‘*in order to sustain and improve our position in the global economy, the Government has committed itself to the ambition of becoming a world leader in skills by 2020, benchmarked against the top quartile of OECD countries*’ (ibid:9).

[D4]

The Chairman of the Higher Education Funding Council for England (HEFCE) opens HEFCE’s Strategic Plan 2006-11 (2007e) by complimenting the HE sector: ‘*English higher education is respected across the world for its high-quality teaching and research... enabling England to compete on a global stage*’ (2007e:4). Similarly, HEFCE’s Chief Executive comments that ‘*our higher education sector is well-placed to respond creatively to the challenges and opportunities in the global economy*’ and ‘*we continue to see the drive towards... improving*

the country's economic competitiveness' (ibid:5). The Chief Executive also confirms that *'a key feature of the next five years will be maintaining a dynamic, world-class research sector which will underpin economic prosperity and national well-being'* (ibid:5). There is acknowledgement of the UK Government's view of *'the important role that the higher education knowledge base plays as a source of the country's global competitiveness'* (ibid:6).

[D5]

In his introduction to the Government White Paper, Innovation Nation (DIUS, 2008a), the Secretary of State for Innovation, Universities and Skills explains that the Government *'want(s) to create an Innovation Nation because Britain can only prosper in a globalised economy if we unlock the talents of all of our people'* and that *'innovation will be the key to some of the biggest challenges facing our society'* (2008a:2). It is declared that *'the Government's aim is to make the UK the leading place in the world which to be an innovative business, public service or third sector [voluntary and community] organisation'* (ibid:4). Support for small business on intellectual property (IP), via government agencies such as Business Link, is planned and will *'help small business exploit their IP through licensing and other means which are increasingly important to innovative business'* (ibid:6). *'The UK's world-class research base'* (ibid:7); *'productivity performance'*; *'international competitors'*; and *'partnership with private and third sectors'* are also mentioned (ibid:4).

[D6]

The Minister of State for Science and Innovation's opening words in the Implementing "The Race to the Top" (DIUS, 2008b) policy document are: *'In a globalised world, with ever increasing competition, we face new challenges as an economy and a society. It is important that we move faster on our science and innovation journey'*. The Minister asserts that *'we must continuously strive to be ambitious... we should be proud of our excellent performance in science and technology innovation; but our strong history of invention provides us with a springboard to do more'* (DIUS, 2008b:4). Innovation, the Minister declares, *'can help us develop a strong, sustainable economy'* (ibid:5). Government sees the establishment of the Technology Strategy Board (TSB) as a significant development that will *'use its investments to create critical mass and coherence so that UK business has greater clarity and is better able to access the most relevant support available'* (ibid:6). The TSB *'will develop and lead a strategic programme worth £1b over the next three years in partnership with the Research Councils and the Regional Development Agencies (RDAs)'* (ibid:9). The extent as to whether SMART (specific; measurable; achievable; reliable; and time-bound) targets will be applied to recipients of Technology Strategy Board funding allocations is not clear. However, the government is clear about improvements in technology transfer and states that *'the UK no longer needs to accept the old criticism that we are good at research but poor at its exploitation. There has been a visible culture change in universities, as they collaborate more closely with business and public services as a core part of their work'* (ibid:16). There is a view in the Department for Innovation, Universities and Skills (DIUS) that *'global awareness of the*

UK's innovation offer is, in parts, poor and that business and Government should collaborate to market the UK's innovation capability; including *'the quality and performance of our world-class universities and research institutes to promote the UK as the international partner of choice'* (ibid:50).

The use of text such as “wealth creation”, “productivity” or “competitiveness” found in the above policy documents is normally associated more closely with business than with education. An example of this use of managerial language, in a higher education context, can be found in Trowler's 2001 paper on New Higher Education discourse. Trowler's (2001) paper examines how the use of certain language may influence the perspective of academic staff. Drawing on data from an ethnographic study of an English university, Trowler focuses upon ‘the extent to which academic staff are “captured” by the discourse associated with “new higher education” (NHE)’ (2001:183). Trowler (ibid) explains that ‘capture’ relates to the attempts to ‘fix the ways in which the world is seen by teachers, students and others’; this intended influence emanating from ‘the power of the discursive repertoires [that are] available’ (ibid). The use of managerial language in government policy documents, such as those analysed in this chapter of the thesis, contributes to the attempts to make HEIs ‘increasingly marketized and managerialist character’ (ibid). As previously discussed in this thesis, there is often a negative reaction to new policy directions by practitioners who may not share the enthusiasm of policy-makers for Government's latest policy initiative. Whilst Fairclough (1993:153), cited in Trowler (2001:184), states that the new market-orientated discourse ‘easily becomes part of one's professional

identity', Hall (1993) argues that such discourse does not affect 'for a minute what is in [academics'] hearts and minds' (cited in Trowler, 2001:184). It will be interesting to note whether there is any evidence from the academic staff interviews, detailed in chapter 5 of this thesis, of the managerial discourse affecting the "hearts and minds" of interviewees at the three host institutions in this study. Trowler (ibid) emphasises that 'market-orientated education policy discourse can be understood as polysemic "text" amenable to alternative readings at variance with that encoded by policy-makers' (ibid).

Five of the six Government policy documents examined have been issued by what would have traditionally have been called 'the Department of Education' (now the Department for Business, Innovation and Skills) and, for the Leitch Review, The Stationery Office (previously Her Majesty's Stationery Office) is the publisher. It is interesting to note that a non-academic theme runs through all of the six publications. As previously stated, this theme has its foundation in economic issues and not education. It would appear that higher education in the United Kingdom is no longer about learning for its own value and that higher education is increasingly becoming conditional upon making a contribution to the economy or the Government's skills agenda, i.e., higher education is tied to "competitiveness"; "productivity"; "jobs". A further discussion on skills strategies and higher education can be found in Roodhouse and Swailes (2007).

Although a true interpretation of the Government's intentions cannot be guaranteed, it is possible to identify the likely direction that Government

higher education policy is taking. What is clear is that there is a consistency between the analysis of the literature in this thesis and the UK Government's business/economic focus in the higher education sector. The extent to which this discourse has impacted upon the three host institutions is discussed in the next chapter; the discourse analysis detailed in this chapter of the thesis, giving a positive impression of the Government's view of HEI *third stream* progress, is compared to the views obtained from interviewees in this study. It must be remembered that, as discussed in chapter one of this thesis, policy-making is complex and there are many pressures on the policy-making process ranging from the desire for UK politicians to be re-elected; European Union influences; through to global economic forces (The National Audit Office, 2001). A useful backdrop is, perhaps, to consider the move to mass higher education during the last two decades. Barr (1993), cited in Barr and Crawford (2005), addresses the issue of alternative funding sources for higher education in the early 1990s and, commenting on policy in the OECD (Organization for Economic Cooperation and Development), is critical of higher education reform (Barr and Crawford, 2005:109). Barr explores the desire of United Kingdom Government 'for expansion without any significant increase in public spending' and detects movement 'towards a more market-orientated system of higher education'. The likely implications of these tendencies, Barr (*ibid*) suggests, are 'a move from tax-funding towards funding from students and other private sector sources'. Specifically, Barr (*ibid*) predicted that the funding of higher education institutions would rely less on public funding and see an increase in institutional current earnings from fees, research grants and contracts. Barr (*ibid*) is particularly critical of the

‘central inconsistency’ of Government’s higher education policy to match the expansion of higher education with ‘either a significant increase in public spending or policies to facilitate private expenditure’ (cited in Barr and Crawford, 2005:109). The current Labour Administration’s higher education policy, as exemplified by the six policy documents highlighted above (D1-D6), has a degree of consistency with the aim of the previous Conservative Government’s higher education policy in respect of the expansion of higher education twinned with HEIs adopting a more commercial focus. The key feature of such a policy is the self-funding of HEIs; working in collaboration with business organisations. Although the current Labour Government’s participation target for higher education exceeds the ambition of the previous Conservative administration, the increase in *third stream* activities, particularly where associated with wealth creation, is not at odds with the intentions of the former Conservative Government.

If the real intention of the current United Kingdom Government is to achieve mass higher education at a much reduced level of unit of funding, this aim is not explicitly betrayed by the Government policy documents examined above. The major thrust of policy that can be observed from an examination of the chosen policy documents is, as previously stated, the economic benefits for the UK from the exploitation of university research outcomes. From the earlier literature review in this thesis, it is unlikely that the majority of academic staff at higher education institutions would be “captured” by any text or discourse found in government HE policy which establishes, as a central principle, a significant move to self-financing by HEIs. The question is worth asking as to whether the focus

upon economic benefits/wealth creation in HE policy documents, with the associated financial benefits for HEIs, is a “Trojan Horse” and disguises a desire by Government to achieve greater outputs from the higher education sector with reduced public funding whilst simultaneously encouraging a more managerial ethos.

If wealth creation really is high up the UK Government’s agenda, as the economic theme in all six policy documents in this study suggest, and there is a desire to establish the UK as ‘the leading place in the world’ to be an innovative organisation (DIUS, 2008a:4), then should we expect greater clarity as to how the prosperity is to be achieved? The Government’s desire for “capacity building” has been reported in this chapter of the thesis, however, capacity building does not necessarily equate with the achievement of wealth creation. Achieving wealth creation through the exploitation of university research requires more from Government agencies than monitoring HEI *third stream* spending and capacity building. “How” wealth creation is to be achieved is not sufficiently explicit in the policy documents; what is the Government’s grand design in this respect? The establishment of the Technology Strategy Board (ibid:6), with its £1billion programme, may again help with increasing capacity in science and technology innovation, however, its long-term success will be reliant upon the cooperation of the Research Councils and Regional Development Agencies (RDAs). Is there a contradiction in Government allocating to Business Link the role of supporting small business with intellectual property (IP)?; why then is HEFCE encouraging HEIs to provide a similar service? There are numerous references in the policy documents to the success of UK

universities and use of the term *world class* frequently occurs. However, reference to ‘SMART’ (specific, measurable, achievable, reliable and time-bound) targets is an omission. Despite the numerous positive comments about the standards of UK universities, a Minister (DIUS, 2008b) states that previous success in innovation in science and technology ‘provides a springboard to do more’ (ibid:4). In terms of international awareness of the United Kingdom’s global position as a leader in science and innovation, the Government reports that global awareness ‘can be “strikingly low” and that there is still work to be done’ (Little, 2006, cited in DIUS, 2008b:50).

The influence that Government policy exerts on higher education institutions to form partnerships; whether that be with other UK HEIs or commercial organisations, or with international partners, may be a strategy to reduce public funding for the higher education sector. The intention of Government, in respect of HEI collaboration, could be to increase the critical mass of partner institutions in order to match the size and quality of recognised overseas world class universities. Alternatively, by encouraging collaboration, the incidence of duplication of research effort, Government may feel, could be avoided. The intention of Government to encourage HEI to collaborate with business may be part of the “business knows best” school of thought that permeates education or it may be an attempt to influence and change the culture of HEIs to one that is more managerial in nature. It is interesting to observe the style and presentation of Government policy documents, including White Papers, issued by the current Labour Administration. The White Paper *Innovation Nation* (DIUS:2008a), for example, is some way removed from the

conventional civil service documentation of past decades and owes its design more to the layout of a corporate business publication than the detailed report format previously adopted by successive UK governments. The cover of Innovation Nation enjoys a contemporary design and each key section of the document has its own individual colour code that features in the border of each page. A diagram has been inserted in the beginning of each key section that is a variation of the White Paper cover and incorporates the individual sections colour scheme.

This section of the thesis, 3.3, has demonstrated that the use of a more economic, managerial, discourse is prevalent in UK Government policy documents that relate to higher education and the *third stream* agenda. It has been suggested that the real purpose of Government HE policy is to encourage higher education institutions to become more business focused in order that they generate their own funds to meet the ambitious targets that the UK Government has set for the expansion of participation in higher education. The use of this economic discourse, Trowler (2001) suggests, is to ‘capture’ and encourage teachers and others to see things in a particular way. Trowler (2001) concludes from his research that academics should be alert ‘to the importance of active resistance to what is becoming an increasingly hegemonic discourse located in managerialist structural roots’ (2001:197). Utilising text and discourse can be a powerful tool by policy-makers and, in the long-term, can have a conditioning effect on the recipients. This effect is consolidated, at times, due to the everyday use of certain terms that the discourse promotes. This process of the socialisation of certain language causes it to become

‘invisible’ and, accordingly, increases its impact (ibid). Whatever this impact may have on individual academics; Universities UK (UUK), the forum for university vice-chancellors, has adopted both the ethos and language of managerialism. In a spending review submission in 2002, *Investing in Success*, Universities UK, states that universities act ‘not only as creators and transmitters of knowledge, but as agents of economic growth... acting as the hub of business networks and industrial clusters, and contributing to the development of entrepreneurialism’ (2002:29). UUK recognises that a culture change in HEIs is necessary if universities and their staff are to ‘accept knowledge transfer as an integral function’ and that ‘this will take some time’ (ibid).

The following section, 3.4, concludes this chapter and highlights the major issues that have been identified in this crucial element of the study.

Conclusions

3.4 There has been a substantial array of information, data and opinions presented in this chapter of the thesis ranging from HEFCE and other DIUS policy documents through to relevant reviews and commentaries such as the Lambert Review on Business-University Collaboration and the Science and Technology Policy Research’s (SPRU) detailed analysis of *third stream* performance. The various strands of thought and reasoning by both policy-makers and observers have been gathered together in order that a view can be formed as to both the UK Government’s perception of the *third stream* performance of HEIs and the appropriateness of the HE funding body’s performance indicators.

The overall impression from the analysis of the HEFCE documentation is that the HE funding body has a positive perception of the performance of HEIs in their *third stream* activities. Reference is made to ‘*third stream* successes’ in HEFCE’s own analysis of performance indicators. There is insufficient reference to SMART (specific, measurable, achievable, reliable and time-bound) targets for *third stream* activities and SPRU offer an alternative to HEFCE’s indicators. In the SPRU framework, an advantage is that all of SPRU’s *third stream* indicators are compatible with SMART metrics and each potential individual indicator is analysed for strengths and weaknesses. The starting point of the SPRU framework is a distinction between the *capabilities* of HEIs and the *activities* that they engage in. The SPRU report provides detailed conclusions including; (1) use a variety of indicators, (2) existing indicators are not enough and, (3) commercialisation indicators are not enough. SPRU emphasise that ‘there are no magic bullets in indicators’ and that ‘indicators of university commercialisation are not a sufficient guide for *third stream* policy’ (2002:60). It is a point of interest as to whether the UK Government is fully committed to the exploitation of university intellectual property, in order to maximise wealth creation, and the evidence from this study is that the Government is comfortable with existing levels of *third stream* performance. Whilst the policy commitments to wealth creation and community/social benefits are not mutually exclusive, it could be thought that the aims of policy in respect of the commercialisation of university research are too modest. The need to build-up capacity/infrastructure is frequently raised and a trend is observed towards the setting of ‘softer’ objectives by HEFCE.

The Lambert Review (2003b) makes a number of recommendations regarding the relationship between higher education and business. With respect to income from *third stream* activities, Lambert observes that even highly successful US universities ‘tend to generate only small amounts of money’ and that universities participate in technology transfer ‘to serve the public good’ (2003b:4). It is not clear what the relative worth of the different strands of *third stream* activity are to the United Kingdom Government, however, as previously noted, HEFCE states in its 2006-2011 Strategic Plan that the UK needs to ‘capitalise on the major strengths of its research base’ in order to create wealth. One of the more prominent vehicles for the exploitation of university intellectual property, spin-out companies, has its critics. Lambert (2003b) suggests that universities have concentrated too much on developing spin-out companies and the success of spin-outs has been questioned by Hague and Oakley (2000) and Wright *et al* (2004a, 2004b, 2004c). Criticisms generally relate to capability, resources and a perception that universities focus on developing new spin-outs rather than on achieving wealth creation. Spin-outs, as this chapter of the thesis has demonstrated, do feature in the reports and policy documents as a key *third stream* activity alongside other *third stream* components such as knowledge and technology transfer; collaborative research between HEIs and business and the exploitation of intellectual property emanating from university research.

The dominant theme that runs through the government policy documents, studied in this chapter, is economic in nature and is located in the context of a competitive global economy that fuels the desire of policy-makers

for increased productivity and wealth creation. Capacity building alone is not enough to increase the wealth of the nation and perhaps the most significant *third stream* issue facing the UK Government is whether policy-makers should further heighten their focus on wealth creation via intellectual property exploitation; how this is to be achieved needs further consideration. Specific targets for HEIs, however unwelcome by individual institutions or some academics, may provide part of the answer. Alternatively, Government may elect to continue the allocation of *third stream* funding more broadly to include support for non-commercial activities such as community based projects. If the decision is to concentrate on wealth creation then the policy-makers will need to take the policy-implementers with them; particularly the academic staff who conduct the basic research and provide the research outcomes. The next part of the thesis, chapter 4, outlines in some detail the research methodology that has been developed in order to assess the success of this specific aspect of government higher education policy.

Chapter 4

Research Methodology

4.0 A significant discovery from the literature review in chapter one of this thesis is the complexity surrounding policy-making and policy implementation. As detailed in chapter one, there are a number of forces, such as globalisation and political expediency, that influence the form and direction of government policy. In order to engage in the complexities of the policy process, it was important to select a research strategy that can cope with the variables; both known and unknown. For this reason, and as a consequence of the review of literature on research methodologies, it was decided that a qualitative methodology was the appropriate approach to take in this study.

There can be a number of obstacles to overcome in undertaking a study such as this and it was recognised from the outset that there would be strict limitations as to the scope of the research (McDonald, 1982:4). The host institutions for this study comprise of one traditional university, one post-92 university and one college with a significant HE provision. All three institutions have campuses that are located in the same University Association region. It is essential to note that by taking a qualitative research approach there is recognition that the samples used in such methods are neither random nor representative. It is important, therefore, that there is no attempt to generalise from the study. The conclusions of this study should reflect the (relatively) narrow base of the research. What is important is to ensure that there is an appropriate level of

academic rigour in order that the research results, including conclusions, have validity (Cunningham and Turnbull, 1981, cited in McDonald, 1982:4). The obstacles to conducting research of this nature, and how they can be overcome, are discussed in the remainder of this chapter of the thesis. A number of questions have been addressed in planning this research such as the purpose of the research, time issues, how to determine validity and, not least, how the data generated will be analysed (Cohen *et al*, 2003:83). My own *third stream* experience, detailed below, is also a consideration.

Engaging in a moment's reflexivity; during my time as a senior lecturer, and subsequently a principal lecturer, in the mid to late 1980s, I was drawn to income generating activities at the two higher education institutions that employed me. Income generating activities (IGA) was the precursor to *third stream* funded activities. As a lecturer, during that period, I found that I was in a very small minority of academic colleagues who shared my interest in commercial/business focused projects. I was personally motivated to engage in IGA by a mixture of things; having held commercial management positions before becoming a lecturer I was attracted to the notion of HE-business links; the extra income that I received above my basic salary was welcome and, perhaps most significant; I enjoyed the challenge that this form of activity brought. In the late 1980s, when government higher education policy dictated mass HE, with the accompanying projected year on year falling unit of resource and an increasing economic discourse, I assumed that IGA was a route to promotion. I believed that HEIs would need the commercial skills that I and other colleagues possessed and that business focused

activities would rapidly expand with related promotion opportunities ensuing. Frankly I was wrong and I quickly started to feel that I was more committed to commercial projects than senior management. It was not that senior management failed to highlight the potential of income generation activities, which they often did by mirroring the words of the funding council; however, there was no strategic direction from top management on IGA. The real challenge was often to get senior academic managers, such as deans of faculty, interested. My experience was that the process, at that time, was somewhat *ad hoc* where individuals might undertake private work or the head of school would search around for someone to take on this extra work. There was no internal strategy document for IGA; no consistent rewards system and, often, little or no administrative support. I have vivid recollections of using my influencing skills to solicit assistance from the departmental administrative staff when faced with the inevitable deadlines that working with commercial organisations demanded. Although, as this study demonstrates, *third stream* funded activities have flourished in the new millennium, it took several years for substantial progress to occur at the higher education institutions that employed me.

From the late 1980's until 2002 I had responsibility as head of school to director and principal officer level in the Vice-Chancellor's Office for what is now described as *third stream* funded activities. My role now involved me in attempting to motivate academic colleagues to engage in commercial activities and, in the latter role, to act as *third stream* ambassador for the vice-chancellor. A major element of this role was to filter out the less viable commercial propositions that would otherwise go

before the vice-chancellors for consideration for internal funding. I was keen to ensure that colleagues with a weak or overambitious proposition were not discouraged and I always attempted to make suggestions for improvement or encouraged alternative ideas. As I have explained in chapters 1 and 2, income generation activities became known as *third stream* activities in the 1990s and incorporated a broader remit including technology transfer. This experience motivated me to explore the education policy context that has driven this relatively new government funding stream and I felt confident in undertaking this study. If anything, I think that my previous *third stream* experience was a benefit during the interview stage of the research; my ability to understand and question the issues raised by the interviewee, and my knowledge of the terminology that was used, perhaps, enhanced my standing in the eyes of the interviewee and encouraged a more forthright discussion than otherwise might have occurred. My being objective, and avoiding any bias, was crucial to the interview process.

The desire that I had, to objectively study the *third stream* aspect of higher education policy, was deeply held and I embarked upon this research with eager anticipation; the prospect of undertaking detailed secondary and primary research excited me and I had no hesitation in formulating a research proposal. The literature review pointed to the need for a qualitative approach to an area of such complexity and this resonated with my own view, based upon my personal *third stream* experience; I would have felt uncomfortable with a quantitative methodology as, in my opinion, it would have failed to capture the richness of the data that was gathered by using a qualitative methodology.

Some of the challenges involved in conducting this study are discussed in section 4.1 below.

Challenges

4.1 The reality of undertaking this research proved to be more testing than I anticipated due to the limited literature available specifically on ‘*third stream*’ policy; the demands of adopting a qualitative approach, that draws upon ethnographic methods, to this research; and, finally, the challenge presented by analysing and interpreting qualitative data. A surprising early revelation in reviewing the literature was that the Higher Education Funding Council for England (HEFCE), the originator of the term *third stream*, when I contacted them, struggled to give a precise date and occasion for when the term was first adopted and its definition. I formed the view that this was not a good omen for conducting a literature review of the *third stream* element of this study when the funding council itself was unable to chart the origins of its own multimillion pound funding stream. Fortunately, as demonstrated in chapter 1 and 2, it was possible to define precisely what *third stream* policy and related activities are through an extensive search of the literature.

From the beginning of this research I felt that there was a tension as to the fundamental nature of this study. Was the research to be about ‘*third stream* funded activities’, with some reference to policy, or, alternatively, was this to be a policy study with a *third stream* focus? Addressing this tension resulted in a major redraft of chapter one, with a strengthened policy content. The face-to-face interviews undertaken, a key aspect of this study, posed a number of difficulties given a lack of familiarity with

the term *third stream* by some interviewees. How was this area of policy to be described to interviewees without influencing their responses? Starting question(s) needed to be framed to elicit the interviewees' views on what the significant issues are, and not those of the interviewer. A further difficulty was that whilst interviewees with knowledge of *third stream* funded activities would freely proffer their personal views, those respondents with more limited knowledge frequently sought to make the interview an information gathering opportunity for them. Data analysis was complicated by the range of responses and my intention to avoid any desire to quantify the data. One initial concern that I had prior to the start of the interviews was the potential effect of my knowing some of the interviewees. I deliberated as to whether this would impact on an individual interviewees willingness to freely engage; either positively, because the interviewee felt comfortable talking to me; or negatively due to any reluctance on the part of the interviewee to respond to our discussion freely and honestly. My concerns were unfounded and I found that all of the interviewees responded well to the "icebreaker" conversation that we had before commencing with the actual interview. All of the interviewees appeared interested in my research topic and, more surprising to me, several interviewees with a poor understanding of *third stream* activities expressed a desire to know more about this area of government policy.

The review of literature on education policy identified numerous references to primary and secondary education. Higher education is less well represented and, particularly, by comparison, *third stream* policy is treated marginally. Whilst the UK government proclaims the successful

uptake of the *third stream* agenda in universities, there is little understanding of the perceptions of all of the social actors; that is, academics and university managers as well as government. Chapter 3 of this thesis details the UK government's perspective on the impact of *third stream* policy and, in chapter 5, the perceptions of academic staff and their managers are explored at the three host institutions. The objective then, overall, of the research is to determine the adoption and implementation of this aspect of government education policy by conducting a qualitative research study focusing on three higher education providers in a specific geographic region of the United Kingdom. It should be noted that qualitative research is not universally welcome and that a qualitative approach, drawing upon ethnographic methods, such as that applied to this study does have its critics. As Rowe (1992) (cited in McTaggart, 1994:324), quoting an education 'policy maker', points out:

'Since the basic questions asked by policy-makers are of a quantitative kind, such as: 'how much?' and 'how confident can we be?', there is considerable disenchantment with responses from increasing numbers of researchers who have been trained exclusively in ethnography and related qualitative or critical approaches to inquiry'.

Although McTaggart considers such comments to be 'issues for blinkered policy-*implementers*', the sentiment represented in this quote will need to be addressed in chapter 5 of this thesis. It is recognised that commentators such as Bostyn (1995:9) consider that 'little genuine ethnographic work has taken place in the educational arena'. Bostyn believes that there has been a 'blurring between ethnographic studies and

those which use any qualitative method'. She regards interviews as a necessary 'watering down' when applied to an education setting. For Bostyn (1995), pure ethnographic work has defining characteristics of 'on-going participation observation' and that the research topic should be viewed 'within the wider context of the lives of the research subjects'. Whilst I consider that, by spending time in the work place of the research subjects, and encouraging the participants to set the interview agenda, the study can demonstrate that there has been an application of ethnographic methods in this qualitative study, this is unlikely to satisfy Bostyn's criteria. The reasons for selecting a qualitative approach are detailed below in section 4.2.

A Qualitative Approach

4.2 A fundamental aspect of a research project such as this is whether 'the data collected will be of an essentially qualitative or quantitative nature' (Remenyi and Williams, 1996:131). Remenyi and Williams (1996) take the view that in 'the collection of complex evidence concerning "why", "how" and "who" [questions], simple survey techniques are not appropriate, and the researcher has to engage in the use of a more sophisticated research strategy' (ibid). The chosen approach to this study can be found in the paradigm of qualitative, naturalistic and ethnographic research methods. The analysis of the qualitative data follows the grounded theory approach developed by Glaser and Strauss in their seminal work, *The Discovery of Grounded Theory* (1967). This section of the thesis will examine the justification for taking a qualitative

approach to the study. Data analysis will be dealt with in more detail in section 4.6.

The selection of a methodology for a study of this nature has to recognise that there are limits to the resource available; there are limits to one's time and the wordage allocated to an Ed.D thesis. Consequently, it is necessary to find the balance between accepting the limitations in scope of such a study whilst ensuring that the appropriate rigour is evidenced in the collection of data and the ensuing analysis and interpretation. The difference between method and methodological framework should also be noted. Scott and Usher (1996:61) observe that 'method frequently refers to instruments by which data are collected'. Method includes questionnaires, observation and interviews. Guba and Lincoln (1994), cited in Scott and Usher, define methodological frame (or research paradigm), in contrast to method, as 'a distinct way of approaching research with particular understandings of purposes, foci, data, analysis and, more fundamentally, the relationship between data and what they refer to' (ibid). Cohen et al (2000), citing Kaplan (1973), similarly describe methods as 'the techniques and procedures used in the process of data-gathering' whilst methodology is intended to 'help us to understand, in the broadest possible terms, not the products of scientific inquiry but the process itself' (2000:44).

It is important to recognise that by using this qualitative methodology any conclusions arrived at can only have validity for other institutions when the extension is made to HEIs that are similar to those which have been

the subject of the research study. In order to facilitate generalisations, it would be necessary to undertake a more comprehensive, comparative study right across the higher education sector. One option would be to apply, as a large scale project, *meta-analysis*. This approach is ‘a method for combining results from different analytical studies of the same research question’ (McNeil, 1996:288). In any case, as Harlen (1997) suggests when exploring the use of research by practitioners and policy makers, ‘we should look across all relevant research rather than at single studies in seeking conclusions to guide decisions or to extend understanding’ (cited in Hegarty:1997:135). Harlen (1997) strongly argues that research needs to be valued and that there should be a will to make more use of research. In particular, Harlen (1997) advocates an increased reliance on systematic reviews rather than the present position where empirical studies enjoy greater prestige (ibid:151).

With regard to this study, it is intended that a significant outcome will be a clear contribution to knowledge which will provide a solid base for future research in this increasingly important area of government education policy. Having chosen a qualitative methodology, it is obvious that I, as the researcher, did not intend to test a specific hypothesis, or null hypotheses, to a selected degree of statistical significance. The intention is to ascertain the perspectives of *third stream* policy on the activities of main grade academic staff at the chosen institutions. The qualitative methodological approach, drawing from ethnography, was seen as an appropriate vehicle to obtain the views of academic staff in respect of how they perceive *third stream* activities in their institution have been brought about as a consequence of the effect of government

policy. The study has also enabled me to compare the views of academics with that of the appropriate manager at each subject institution who has responsibility for overseeing the *third stream* agenda. At the design stage of this study I gave careful consideration to which groups or category of actors I regard as essential to this research. In addition to the views of academics and *third stream* managers, who I consider to be central to understanding the reasons for the adoption and implementation of *third stream* activities at the three HEIs, I also deliberated on the inclusion of heads of school and deans of faculty as well as members of the vice-chancellors office and governors. Academic staff are the individuals who largely carryout the *third stream* activities and the *third stream* managers are responsible for the achievement of an HEI's targets in this area of provision. Accordingly, both of these groups were included in the fieldwork. As I explain earlier in this section of the thesis (4.2), my intention has been to make a clear contribution to knowledge which will provide a solid base for future research. In this regard, my decision was to interview academics and *third stream* managers and achieve triangulation (see section 4.4 of this chapter) by a comparison with the view of government funding bodies and agencies via official government publications. It is not that the views of either heads and deans or vice-chancellors and governors are not of interest, rather it is the relationship between what the policy-makers desire and the perceptions of those who are expected to conduct *third stream* projects and activities that is crucial to this study. The scope and validity of an Ed.D study have also been important considerations as I did not wish the length of the thesis to become unmanageable nor for the focus of the research to become distorted. My preference has been to include vice-chancellors/chief

executives and governors in a follow-up research paper, which builds upon this study, and this work is in progress. The publications analysed in this study, using Ball's (1994) method for discourse analysis, report on the success of policy by the application of criteria such as the number of university spin-off companies and IPR (intellectual property rights). The government publications examined do not exhibit a rigorous process of evaluation. The following discussion clarifies the need for the chosen methodology.

A qualitative approach was selected as it was recognised that the complexity of Government *third stream* education policy, and its implications for HEIs, could not be adequately assessed by questionnaire data-gathering. The chosen method of in-depth interviews has allowed the subjects to determine the questions as well as using their own words and relate to their individual experiences. Had a quantitative approach been selected, the obligation to set questions would have substantially restricted the scope of the investigation. In selecting a qualitative approach it has been possible to consider inductive data analysis strategies. 'Induction' is the opposite of hypothesis testing in that the theory is developed from the data (Scott and Usher, 1996:143). McNeill (1990:65) supports this view and advises that 'hypotheses are expected to emerge from the research as it goes along, rather than be specified from the start and used as a guide to the kind of data that is sought and collected'. Coleman and Briggs (2002) note that, with qualitative research the focus of interpretation is on 'words rather than numbers the key issue for qualitative researchers is that textual analysis predominates'. In support of this view they cite Miles and Huberman (1994); 'words can be

broken into semiotic segments. They can be organised to permit the researcher to contrast, compare, analyse and bestow patterns upon them' (ibid:21). The following section, (4.3), explains the importance of discourse analysis to this study

Discourse Analysis

4.3 This thesis attempts to successfully apply the 'tools' that Ball describes as 'interpretive resources' (1994:1). These three epistemologies are 'critical policy analysis, post-structuralism and critical ethnography'. With regard to critical policy analysis, Ball suggests, 'the concern is with the task rather than with the theoretical purism or conceptual niceties'. 'Discourses' and 'texts' are at the heart of post-structural analysis. Post-structuralism, Ball informs us, 'offers very different ways of looking at and beyond the obvious and puts different sorts of questions on the agenda for change'. The third of Ball's epistemologies, ethnography, is addressed in this doctoral research and the 'methods, data and analytical procedures.... generate critical perspectives upon the impact and effects of policy in local settings' (ibid:2). This is a crucial aspect of this study; with its focus upon the impact of *third stream* policy on the three institutions that are located in the same University Association region.

The application of Ball's 'tools' may well contribute to, what Ball describes as, an 'unmasking of power for those who suffer it' (1994:1). Banister *et al* (1994), explain that 'discourse analysis treats the world as a text, or a as a system of texts which can be systematically "read" by a researcher' (1994:92). Ball (2008) comments that 'the discourses that are in play, in a whole variety of diverse policy settings are, are important in

two ways'; they 'contribute to the construction of the need to reform' and, secondly' (2008:13), 'in providing and making "appropriate" policy responses and solutions. Ball suggests this is particularly relevant 'in the case of globalisation and international economic competition' (ibid). In addition, Ball states that 'rhetoric claims are easy to make but the enactment of policy is complex and difficult' and that policy-makers often assume favourable conditions when they devise policy (ibid:195).

In section (3.3) of chapter 3, there is a detailed examination of a selection of government policy documents that are relevant to the *third stream* agenda. The perspective that I have taken is influenced by the 'text and discourse' approach advocated by Ball (1994:1). My objective is to identify what the Government is really saying and what its intentions are in respect of this area of education policy. In chapter 2 of this thesis the review of literature explored the views of several commentators who assert that higher education is moving closer towards the private sector, particularly in terms of the exploitation of intellectual property, and that research funding is increasingly dependant upon basic research making a specific contribution to the economy (Etzowitz, 2000; McDaniel, 1996; Wilson 1995; Soares and Amaral, 1999). The focus that I took was to explore the government publications to ascertain whether the economic theme that has emerged from the literature review is also evident in UK government policy documents.

The analysis of the six prominent policy documents, each one relevant to the *third stream* agenda, provided illumination as to the intent of government and did indeed reveal a language that is more usually

associated with business than with education; key words displayed in the policy documents included “wealth creation”, “global economy” and competitiveness”. These managerial type of words seem to be a far cry from the dialogue that reflects those universities that are traditionally associated with collegiate governance and what one commentator referred to, reported in chapter 2 of this thesis, as ‘cartels of producer interest’ (Milliken, 2004:13). The economic theme emerged by careful analysis of the documents to identify and collate groups of words and phrases in order to achieve clarity of the government’s purpose. The intention was to identify any obvious or subtle differences in meaning in the text of the policy documents (Coyle, 1995:247). Commentators have recommended using signalling devices to assist the researcher in differentiating the information that is being analysed; underlining being one such method (Goldman and Duran, 1988; Lorch, 1989; Parker, 1992). Key words and phrases were underlined and a pattern was observed across the range of documents. It should be noted that these are my interpretations of the government policy documents and other interpretations could be made. That said, the proposition that I am arriving at from this aspect of my research is that the UK government is, by adjustments in policy discourse, moving HEIs towards being more market-orientated; more commercial mission and culture. This policy development fits comfortably with the *third stream* agenda. The following section considers the issue of validity.

Validity

4.4 As previously stated, there is some debate regarding what does or does not constitute ethnography. Cohen *et al* (2002:78), for example, offer as a characteristic of ethnography a ‘wide data base gathered over a long period of time’. It is important to note that in this study the approach being taken is to apply ethnographic methods rather than attempt ethnography. Nevertheless it is worth still reflecting on the advantages and disadvantages that characterise ethnography as they have a relevance to the approach taken. Denscombe (1998:78) argues that ethnography has a number of advantages in its favour including the benefits of; *empirical* research ‘involving direct contact with relevant people and places’; *detailed data* ‘which are relatively rich in depth and detail’ allowing the potential for handling ‘intricate and subtle realities’ and, finally, *holistic* explanations that emerge from focusing upon ‘processes and relationships that lie behind the surface events’. Ethnography, Denscombe (*ibid*), suggests, offers the advantage of looking at things in context rather than exploring issues in isolation.

Denscombe (*ibid*) also notes several disadvantages with ethnography including; *stand-alone descriptions* which is when ethnography produces a series of ‘pictures’ that are portrayed as ‘separate isolated stories’ rather than ‘building blocks pictures’ that can be ‘layered’; *story-telling* is when there is the potential to ‘provide descriptive accounts’ resulting in research which is ‘atheoretical, non-analytical and non-critical’ (*ibid*:79). Denscombe also comments upon the issues of *reliability*, *little prospect of generalisation* and the danger of *insider knowledge* which can result in a ‘blind spot’ due to the researcher’s vision being obscured by prior

knowledge (ibid:80) The issue of prior knowledge is very relevant to me as, in my explanation earlier in this chapter of my thesis, I have considerable experience of *third stream* activities both as an academic and as a university manager with responsibility for the *third stream* area. McNeill (1990:83) raises a similar point when he states that the researcher ‘must not impose any prior assumptions on the subject’; the theory should emerge from the observation. This, in McNeill’s view, is a great strength. He also praises ethnography for ‘the study of social process, rather than being limited to the snapshot or series of snapshots of the survey researcher’. These attributes are highly desirable when dealing with the complexity of the policy process. The potential for the occurrence of prior assumptions is relevant to my position as researcher, due to my prior experience working in the field of study, and I have had to, therefore, maintain objectivity throughout this study. The key to maintaining objectivity, I have found, is to, firstly, ensure that the literature review is thorough and that conflicting views or accounts are equally presented; secondly, to take the starting position of any line of enquiry from either a revelation found in the literature or from information obtained from an interviewee. A guiding rule is that any assumption must be evidenced.

McNeill (1990) identifies, amongst critics, that unreliability is frequently stressed. The reason given is that it is not possible to repeat the research and, therefore, check the descriptions and conclusions that have been drawn. He suggests that critics of ethnography are concerned that ‘it is not possible to judge whether the social context or the people studied are in anyway typical or representative’. Despite the concerns of critics,

McNeill states that ethnographic research can be scientific if ‘care (is) taken to avoid error, to be thorough and exhaustive, and to check and recheck all findings’ (1990:83).

Looking at things from different points of view offers the opportunity to corroborate research findings. The different perspectives can be used to enhance the validity of the data (Denscombe, 1998:85). The use of two or more methods of data collection which is then used ‘to determine the accuracy of information or phenomenon’ is referred to as triangulation (Coleman and Briggs, 2002:68). Banister et al (1994), in supporting triangulation, state that ‘we need to recognise that that all researchers, perspectives and methods are value laden, biased, limited as well as illuminated by their frameworks, particular focus and blind spots’ (1994:145). In this research project, triangulation is attempted by comparing the views of government (via its agencies) as set out in official documentation, with those of academic staff and their managers who have responsibility for *third stream* activities and who represent the views of the institution. Triangulation will, therefore, be achieved by: (1) the analysis of the documentation; (2) interviews with individual academic staff; (3) interviews with appropriate managers, plus; (4) addressing my own potential bias and, (5) respondent validation by *third stream* managers. The information is cross-checked, compared, and triangulated ‘before it becomes a foundation on which to build a knowledge base’ (Fetterman, 1989:19). Miles and Huberman (1994:266) identify a significant issue when they ask the question of which response is the one to believe when only two measures are used if they are contradictory? In this study, involving *third stream* managers; academics

with and without *third stream* experience; and triangulated with documentary evidence, a conclusion was available. Respondent validation by *third stream* managers occurred after all thirty interviews, involving both managers and academics, had taken place and the analysis of documentation was concluded. The themes that had emerged *in situ* during the fieldwork, and my propositions, were discussed in detail with the managers. All three *third stream* managers were content with my interpretation and confirmed that my findings are consistent with their experience and the information that they provided during the individual manager interviews. The interview process is discussed below.

Interviews

4.5 In research studies such as this the problem is twofold; firstly, how does the researcher elicit answers from respondents and, secondly, how is the resulting data analysed and interpreted? (McDonald, 1982:22). In terms of timescale, classic ethnography, Fetterman (1989:18) suggests, ‘requires from six months to two or more years in the field’. Fetterman (1989) states that the ‘fieldwork is exploratory in nature’ and that ‘the most important element of fieldwork is to be there – to observe’. This approach, it is argued, involves asking ‘seemingly stupid yet insightful questions, and to write down what is seen and heard’. Fetterman observes that ‘one articulate person may provide a wealth of valuable information’.

Minzberg (1979), cited in McDonald, 1982:24, suggests that ‘while systematic data create the foundation for our theories, it is the anecdotal data that enables us to do the building. We uncover all kinds of relationships in our “hard” data, but it is only through the use of this

“soft” data that we are able to explain them’. Coffey and Atkinson (1996:98) comment that fieldwork generates a number of ‘physical products’. These so called products include the field notes and genealogies. It is recognised that an ‘analysis of “fieldwork” reveals many aspects that could be followed up with a more thorough analysis’. Cohen *et al* (2000:145) suggest that the qualitative researcher can gather information by using a variety of techniques and ‘that there is no single prescription for which data collection instruments to use’ and, going further, they describe the ethnographer as a ‘methodological omnivore’. They detail field notes, participation observation and interviews amongst the instruments more widely used; the focus being ‘fitness for purpose’. With this in mind, the data collection method that I selected for this study is in-depth interviews; the reason being that the evidence from the literature suggests that this method would generate a richness of information. Also, my own *third stream* experience, previous discussed, led me to believe that the interviewees would have much to offer if they could set, or at least contribute to, the agenda.

Academic Staff and Manager Interviews

4.5.1 Neumann (1987:166), citing Schutze (1976), advocates that with qualitative research it is important that the interviewee structures the interview ‘with the interviewer providing minimal guidance’. The role of the researcher is to listen; it is important that reflections of the participants experience can ‘unfold’. Neumann (1987) considers that, at the time of publication, ‘individual case studies are in the forefront of

qualitative research approaches' and he concludes that information regarding the 'everyday world' of interviewees will provide material that is 'rich in substance'. Bogdan and Taylor (1975), cited in Moustakas, 1994:2, offer several strategies that are relevant to this study such as the following:

- (a) Look for key words in observing interactions and in recording comments of participants and staff.
- (b) Concentrate on opening and closing statements.
- (c) Soon after leaving the setting, make notes of all that can be remembered.
- (d) Outline specific acts, events, activities, and conversations.

Also, in the case of interviews it is recommended that part of the interview be allocated to casual conversation about current events in the participant's life. This assists the building of rapport between interviewer and interviewee that is desirable when adopting an ethnographic approach (Hammersley and Atkinson, 1983:194). In selecting this approach, derived from ethnographic lineage, I examined the merits of this application and this is discussed below.

The approach taken by the researcher in this study has been true to Neumann's doctrine as well applying the strategy above by Bogdan and Taylor. Limited information was provided to participants at the beginning in order to elicit the participant's views and details of his/her experience. The total number of interviewees at the three HEIs was 30; that is, 10 at each institutions. Each session was allocated a maximum of one hour. One participant from each institution was a manager with responsibility for *third stream* activities. The total time allocated to this aspect of field work, excluding data analysis, was thirty hours. The first three interviews

were pilot interviews. This enabled me to validate the chosen approach and determine the individual academics to invite to be involved in the study. The academics selected included those with knowledge of *third stream* activities and those suspected of having little knowledge of this area of their respective institutions' work.

The selection of interviewees was made on the recommendation of the *third stream* manager at each of the three higher education institutions; I felt that this was the mostly likely way that I would achieve the required balance. Access to the three host institutions was gained by my direct request to a senior manager at each of the three host institutions. The attraction of these particular HEIs was that one is a traditional university, one is a new university and one is seeking university status; all three HEIs are located in the same university association region. Interview arrangements were generally made by the *third stream* managers, who contacted potential interviewees and arranged meeting rooms.

Occasionally, I would contact a potential interviewee who had been identified to me. The reason for selecting a mixed group at each HEI is that it was felt by the researcher that this would provide a greater understanding of the range of adoption and implementation of *third stream* activities at each of the three host institutions. It was seen as desirable to understand the perceptions of academic staff even if they are not directly involved in *third stream* activities. If only academics who are actively involved in *third stream* were to be interviewed, this, it was considered, would create a result that gave a more positive picture of the impact of the policy at the HEI than is the reality. Of course, the interviews demonstrated that, on some occasions, individual interviewees

displayed either a greater understanding or ignorance of *third stream* policy than expected. Although there was no request for anonymity at any of the three host institutions, I decided that, in my attempt to ensure the honesty of responses, fictitious names would replace the names of the three host institutions. An assurance was given that no interviewee would be named in the study and that all interview contributions will remain unattributed.

It is natural to assume that individuals will be resistant to change (Eccles, 1994) (Burnes, 2000) and this should be taken into account when considering the willingness of social actors to embrace new policy. There are those people who tend towards ‘traditional’ ideas and those whose views are ‘progressive’; higher education is no exception. The former favours the status quo and the latter support change (Falchikov, 1993:487). Falchikov (ibid) argues that ‘this is no more marked or pervasive than in higher education’ and she asks the question as to why some lecturers are innovators and others are not; preferring ‘to deal with the business of education in tried and tested ways?’ (ibid:489). It seems reasonable to assume that traditionalists will be averse to *third stream* activities, whilst progressives, with their tendency to favour change, will be more receptive to this area of government education policy. Carlson and Fridh (2000:41), exploring technology transfer developments at universities in the USA, highlight the division from the traditional role of universities by asking a series of questions such as ‘how does the university manage the risk exposure associated with technology transfer?’ and ‘how does the university organise the commercialization process with respect to licensing, start-up or spin-off?’ The position before the 1990’s

was that such questions taxed only a minority of UK universities; now the vast majority of HEIs regularly bid for *third stream* funding. This study seeks to assess the impact of this area of UK Education Policy by focusing upon the perception of academic staff and the manager responsible for *third stream* activities at each of the three host institutions.

Pilot Interviews

4.5.2 Each interview started with casual conversation, usually with the interviewer (me) asking how things are progressing with the interviewee or the institution/section. The interviewer's opening statement addressed what the subject is to be discussed with them:

'This interview is part of a study that I am undertaking for my doctorate in the area of third stream higher education policy. Third stream has its origins in income generation and is a core HEFCE funded theme following teaching and research'.

I then explained that I do not have all the questions, and that I encourage the interviewees to raise any issues that they see as relevant to the interview topic. A major concern was that I do not impose any prior assumptions on the interviewee. It was explained to the interviewee that there are no right or wrong answers. The order of the three pilot interviews was Maintown College Academic 1, Maintown College Academic 2 and Stapletower University Manager. This sequence was selected in order to include an academic thought to have an understanding of *third stream* activities (Maintown College Academic 1); an academic

thought to have less of an understanding of *third stream* (Maintown College Academic 2) and an experienced manager with responsibility for *third stream*.

I was content with how the first pilot interview progressed and, although it was too early to identify emerging key or code words; sufficient data had been gathered as a start in the process of comparing and contrasting these views with the opinions of other interviewees in this study; resulting in the identification of common themes.

The second pilot interview was with an academic at Maintown College who was thought not likely to have an understanding of *third stream* policy and activities. The initial question, after the introduction, was to enquire what the interviewee believes *third stream* policy to be. In the second pilot interview, the knowledge that the interviewee demonstrated regarding *third stream* activities was somewhat limited to the provision of non-mainstream courses. The professionalism of academic staff featured in the interview as did the commitment of staff to the students. There was no mention of research, or its exploitation, despite the enthusiasm the interviewee has for the College to achieve university status. Entrepreneurship is included in the curriculum. It is clear that local partnerships involving the LEA are important to this school. As with the first pilot interview, it came across from this interviewee that the UK Government is likely to be satisfied with the adoption of *third stream* policy. It would appear that the Government's message on *third stream* policy has not completely got through to this individual; however, the interview has proven to be useful and represents a benchmark for the

remaining interviewees, across the three host institutions, who had yet to be interviewed. The pilot interview stage of this study was complete with the next interview involving the manager responsible for *third stream* activities at Stapletower University.

This third pilot interview, coupled with the two other pilot interviews, satisfied me that the chosen research method was appropriate for a study that seeks to understand the complexity involved in the adoption and implementation of *third stream* policy. The three pilot interviews have informed discussion in the remainder of the interviews in this study. Following the pilot interviews, approximately half of the remaining interviews build on the themes identified in the pilots. For the concluding interviews the main concern is to tighten the focus of the interview discussions in order to reduce the key words, phrases and clusters and generate mini-theories; finally, any integrating theories are developed (Chesler, 1987).

Section 4.6 below deals with the important issue of how to analyse and interpret the data from a qualitative study.

Analysis and Interpretation of Qualitative Data

4.6 In qualitative research there is a temptation for many researchers to spend considerable time attempting to turn the qualitative data collected into numbers or quantify it in some way (Easterby-Smith *et al*, 1994:344). The reason for this behaviour, Easterby-Smith (1994) and his colleagues suggest, is that researchers 'recognise that numbers have a seductive air'. Being concerned with the acceptability of the research

findings researchers often ‘gear their data to quantitative statements’. The problem with taking this approach, as Easterby-Smith *et al* emphasize, is that ‘others argue that doing this spoils the richness of the data’ and denies ‘the holistic view so important in qualitative research’. Many managers or funders, Easterby-Smith *et al* (ibid) suggest, prefer quantitative statements and ‘the political need for numbers wins through’ this despite the preference of the researcher. Two approaches to the analysis of qualitative data; one attempting to quantify the data and the other adopting a more inductive style, can be demonstrated, respectively, by *content analysis* and *grounded theory*. In content analysis the researcher ‘goes by numbers’ and ‘frequency’; by contrast, with grounded theory, the researcher ‘goes by feel and intuition, aiming to produce common or contradictory themes and patterns from the data which can be used as a basis for interpretation’ (ibid:345).

The task of qualitative data analysis presents significant challenges for the researcher as the ‘multiplicity of data sources and forms’ are complex. This challenge applies to ethnographic methods such as that undertaken in this study (ibid:55). Content analysis has long been chosen as a way of dealing quantitatively with qualitative data and consists of ‘counting the frequency and sequencing of particular words, phrases, or concepts’ (Miles and Huberman, 1994:49). I gave much consideration to using content analysis to analyse the data gathered in this study.

Ultimately, the logic of Easterby-Smith *et al* (1994:347), was accepted; that is, if content analysis is applied ‘although the researcher will be able to understand what the concepts are, he [or she] will be unlikely to understand why the ideas occur and why individuals interpret things or

issues in their different ways'. This was seen as a limiting factor on potential outcomes from the study and, accordingly, this form of data analysis was discounted and the alternative, grounded theory, was then considered.

Grounded theory was developed in the 1960s by Glaser and Strauss as a means of developing theory from qualitative data (Ormerod, 1996:6). Strauss (1987), cited by Ormerod, states that grounded theory 'is not really a specific method or technique. Rather, it is a style of doing qualitative analysis' (ibid). Moustakas (1994:4) states that in grounded theory 'the focus initially is on unravelling the elements of experience'. The development of a theory, Moustakas suggests, 'enables the researcher to understand the nature and meaning of an experience for a particular group of people in a particular setting'. Addison (1989), cited by Moustakas, notes that grounded theory researchers 'generate theory and data from interviewing processes rather than from observing individual practices'. It is also noted by Addison (1989) that in this approach 'data collecting, coding, and analysis occur simultaneously and in relation to each other' (ibid:5). In analysing the data from transcripts, all statements are considered to have the same value and the meanings of the statements 'are clustered into common categories or themes'. The clustered themes are used to produce textual descriptions of the experience, which in turn are used to construct 'the meanings and essences of the phenomenon' (ibid:118).

I was attracted to a grounded theory style of data analysis as I felt that this form of data analysis is more appropriate to the qualitative method

selected for this study and that the complexity of the subject and richness of the data would best be served by undertaking a grounded theory approach. It is essential that themes can be identified *in situ* during fieldwork. The role of the researcher, McDonald (1982:29) advocates (citing Glaser and Strauss, 1967), is not concerned with providing ‘a perfect description of an area, but to develop a theory that accounts for much of the relevant behaviour observed’. Chesler (1987), cited in Miles and Huberman, 1994:87, offers a more comprehensive illustration of the sequential analysis of data described by Moustakas (1994), detailed in the previous paragraph. This sequence, as extolled by Chesler (1987), has influenced the practice adopted in this study:

- Step 1: Underline key terms in the text
- Step 2: Restate key phrases
- Step 3: Reduce the phrases and create clusters
- Step 4: Reduction of clusters; combine to form meta-clusters
- Step 5: Generalisations about the phrases in each cluster
- Step 6: Generating minitheories
- Step 7: Integrating theories in an explanatory framework

(Chesler, 1987, cited in Miles and Huberman, 1994:87)

It is important to note that as a study progresses ‘there is a greater need to formalise and systemise the researcher’s thinking into a coherent set of explanations’. This can be achieved by the generation of propositions or ‘connected sets of statements, reflecting the findings and conclusions of the study’ (ibid:75). Bogdan and Biklen (1992) assert that ‘the process of redefinition and reformation is repeated until the explanation is reached

that embraces all the data, and until a generalised relationship has been established'. They maintain that there needs to be some effort to 'find cases that may not fit into the explanation or definition' (cited in Cohen *et al*, 2000:151). This issue is relevant to this study as success in *third stream* activities at a particular institution may not be due to government policy and may be attributable to other factors. Bartlett (1991:24) states that 'the performance of an action may be conceived as an event which is describable in a variety of ways'. The key here is how the action is described as this will determine the meaning.

In practical terms, the application of grounded theory in this study started with my desire to understand how *third stream* policy had impacted on each of the three host HEIs. Open-ended questions were selected as the interview instrument due to the need for unstructured interviews that would enable me to conduct a sequential analysis, such as that advocated by Moustakas (1994) and Chesler (1987) above, and in order to address the complexity of policy-making. By applying this instrument it was possible for themes to emerge *in situ* which were subsequently refined. This process progressed to the generation of propositions that explain the phenomena in question. Prior issues generated from the literature, including *the perspectives of academics on third stream, evidence of a more entrepreneurial culture (Clark, 1998a) and changes in the role of academics (Halsey, 1992) and in management style (Reed and Deem, 2002)*, have provided themes for the research. These themes have initiated starting questions that were framed in such a way as to draw out *the interviewee's views* on what the significant issues are. The essential tools of note-taking, coding and memo writing were applied (Chesler,

1987, cited in Miles and Huberman, 1994:88). Following each interview I noted the key issues that had emerged and, using highlighting pens, I coded the different categories of variable; differentiating those items that appeared central to my research. Using what Chesler (ibid) describes as “memo writing”, I then wrote notes to myself that provided an explanation, if apparent, for what I had discovered from the interview; sometimes this would link to a point raised in other interviews or relate to a similar issue that had emerged from the literature review. A number of large post-it stickers were used in this aspect of applying grounded theory. Several such memos have, a step at a time, led to the formulation of my propositions. An example of how a particular interviewee can contribute to this outcome is given below.

To illustrate this process a brief extract of the interview with the *third stream* manager at Maintown College, and the associated coding and self-memoing, is detailed below. The extract is in response to a researcher question by me enquiring as to the willingness of academic staff to engage in *third stream*:

‘Staff may be willing but not able or perhaps have other interests... the big problem is that the best people [academics at a university where the interviewee previously worked] are wanted for everything [such as programme development and research] and there is an opportunity cost of using these staff. Sometimes staff left to join partner companies. This group of staff [who have academic and technical expertise and the ability to deal directly with business people] is 10% max... Third stream masks other opportunities. Staff would love to get involved but does the

university allow them to do it; value it and create space? Other issues are allowances [for academics to undertake third stream activities]... why bother [with third stream] when the research assessment exercise (RAE) is coming up?... and is the old universities' top priorities....' (Maintown College Manager)

Coding – the following key phrases are restated:

- 'perhaps (academics) have other interests'
- 'the best people are wanted for everything'
- 'sometimes staff left to join partner companies'
- '(best people) is 10% max'
- '*third stream* masks other opportunities'
- 'other issues are allowances'
- 'why bother when the RAE is coming up'

Memo

'My immediate feeling is that *third stream* is not a priority and that this situation is compounded by, in the interviewees' opinion, the restriction of having a maximum of 10% of academics who have both the necessary expertise as well as the ability to deal with commercial organisations. The low priority of *third stream* is consistent with the review of literature in chapter 1 and 2 (revisit) – references such as Williams (1992) regarding the resistance to industry pressure by academics or, as Holland says (Gray, 1999), is the problem that HEIs struggle to connect with the outside world? Kennerley (1992) points to the difficulty of managing academics. Perhaps this is part of the difficulty. How should academics be managed? Do HEIs provide the resources for *third stream* activities to

flourish? What is in it for academic and other staff? Why do staff leave to join commercial partners; do they offer greater opportunities or is it simply the issue of salary? (explore the literature on rewards for staff – what is HEFCE’s position?). Its early days yet but the interests of academics and related rewards could be a significant issue in *third stream* performance; crosscheck with other interviewees’. (Researcher self-memo).

The content of interview extract above has had an influence on both the selection of the three main results categories (*Understanding Third Stream Policy, Barriers to Third Stream and, finally, Implications of the Third Stream*) and of the formulation of my propositions. The strongest influence of this aspect of the manager interview was to help identify the *Barriers to Third Stream* results category. In this respect, the interviewee provided an insight into why there is not a greater take-up of *third stream* activities by academics. This included, in the managers’ experience, the limited number of staff who have the both the technical expertise and ability to work with commercial organisations, as well as having the distraction of other interests and priorities including the research assessment exercise (RAE). With regard to my propositions, the dialogue with the manager regarding the multiple demands upon the “best people” and the issue of “allowances” was a considerable influence on my decision that a proposition should include consideration of the establishment of a system of rewards for staff who participate in *third stream* activities.

Whilst I was comfortable with the application of grounded theory in my research, it should be noted that here are critics of grounded theory; Easterby-Smith *et al* (1994) comment that this situation applies to many systematic approaches. They suggested that ‘it can be argued that the systematic nature of the process to provide rigour... becomes a reductionist approach’. Easterby-Smith and his colleagues emphasise that ‘qualitative data is about “feel” and an implicit component of all research is the honesty of the person conducting the research’ (1994:350). A similar view is taken by Scott and Usher (1996:78) who argue that the validity of the data, and the resulting theory, ‘are only valid in as much as the way those data were collected in the first place was valid’.

Rob Watling (2002:262) suggests that ‘analysis is the researcher’s equivalent of alchemy – the elusive process by which you hope you can turn your raw data into nuggets of pure gold’. Watling’s view is that if the researcher feels that qualitative analyse is too imprecise or ‘too vague to act as the basis for generalisation’, then a more quantitative approach should be adopted. In this study, the researcher considers that the complexity of policy requires a qualitative research approach and that this is judged to be a more important consideration than seeking to generalise from the research results. The issue of interviewee confidentiality is clarified in the following section.

Anonymity

4.7 Throughout this thesis the identity of the three host higher education institutions (HEIs) and all thirty interviewees have been concealed to protect anonymity. Fictitious names have replaced those of

the three host HEIs and individual interviewees have been assured that they will not be named and that all interviewee contributions will remain unattributed. This is in keeping with the University of Durham's policy regarding research ethics; the University's ethical procedures have been followed throughout this research.

Conclusions

4.8 Basically, the total research approach has been to organise the research into three separate parts; (1) a literature review, (2) an examination of relevant published UK government documents and, finally, (3) thirty in-depth personal interviews at three institutions that provide higher education. Three of the interviews were pilot interviews. The three host institutions selected are all located in the same University Association region and comprise of one traditional university, one new university and the university centre of a college with significant HE provision.

A qualitative research approach has been taken. The limitations of conducting a research project such as this have been recognised and it is accepted that such an approach does not allow generalisation as the samples used are not random or representative. Much thought was given to the choice of taking either a quantitative or qualitative research approach. An approach was selected that falls into paradigm of qualitative, naturalistic and ethnographic research methods. This decision was made due to the complexity of policy and the relationship between business and higher education institutions. This determined the need to

collect raw data in a broad range context. The theory emerges from the data collection method. The approach taken has been to draw upon ethnographic methods rather than adopt a classic ethnographic approach.

Validity is attempted by using triangulation to determine the accuracy of the data gathered. Triangulation, Fetterman (1989) suggests, 'is basic in ethnographic research. It is at the heart of ethnographic validity, testing one source of information against another to strip away alternative explanations and prove a hypothesis' (1989:89). In this study the process of triangulation involves comparing the views of government, via official documentation, with the rich data gathered from the thirty in-depth personal interviews of academics and the manager responsible for *third stream* activities at each of the three host institutions. The interviewees were all encouraged to relate to their personal experience by setting the interview agenda, determining their own questions and using their own words and phrases. Limited information was given to both academics and managers at the start of the process. Research themes have been generated both by a study of the literature and *in situ* during fieldwork. These individual interviews included both those academics that were expected to understand the *third stream* policy agenda and those who were perceived to lack familiarity of this area of education policy.

The richness of the data gathered required the application of an appropriate method of data analysis that would ensure that the true meaning of the experience of the participants could be elicited. Grounded theory was selected as the method of data analysis. As the researcher, I felt that this form of data analysis was more appropriate to the qualitative

approach drawing upon ethnographic methods undertaken in this study and would better suit the complexity of the subject and richness of the data. As the study progressed, by applying grounded theory, the researcher was able to formalise his thinking and determine what the explanations are. This process involved looking at cases that may not readily fit the explanation. This churn allows the theory to emerge. The validity of the theory relies upon the rigour of both data collection and data analysis. Reflexivity enabled me to confront the potential for bias that I might have due to my own previous experience of *third stream* activities, both as an academic and as a HE manager.

My experience from this study resonates with the view of my colleague Richard J Woolford (2006:94) who states that ‘Qualitative research techniques often provide extremely rich data but they can be time-consuming’. This is a statement with which I am happy to concur. The next chapter of this thesis details the analysis of findings from field research at three host institutions and provides an insight as to the extent that academics at the three institutions are “captured” by the text and discourse surrounding the UK Government’s *third stream* policy agenda.

Chapter 5

Host Institutions and Analysis of Results

5.0 In this chapter the thesis presents the findings arising from the analysis of the data outlined in chapter 4. The application of the grounded theory approach (Glaser and Strauss, 1967) unveiled the emergent themes and categories that are discussed in section 5.2 below. It is evident from the evidence presented in chapter 3 that the Government and its funding agency, HEFCE, have a positive view of the success of the *third stream* education policy. The analysis of policy documents reveals that there is a belief by Government that higher education institutions are performing well and that a number of UK universities are world class. The *third stream* indicators shown in HEFCE documentation illustrate the improvements made over several years. A key element of this aspect of the study is to what extent the academic staff at the three institutions have embraced *third stream* policy. The themes emerge from the grounded theory and these are compared to the findings from other research identified in the literature review. Commonality and differences between the insights gained from the literature review and the analysis of the fieldwork results are explored.

The following section has been included in order to provide the reader with a feeling for the size and areas of provision offered at the three host HEIs. This, it is intended, will assist the reader in having a clearer understanding of any comparisons between the host institutions.

The Three Host Institutions

5.1 The names of the two universities and the college are fictitious in order to protect the anonymity of the three UK host institutions; Rockbridge University (a traditional university) ; Stapletower University (a new university); Maintown College (significant HE funding and aspires to be a university).

Rockbridge University

This traditional university has held its royal charter for several decades and is rated as excellent in a range of disciplines. Total HEFCE funding received by the University is circa £50m. Rockbridge regularly features in the top third of university guides/league tables and is popular with its students. The University engages in basic research and is committed to knowledge and technology transfer. Rockbridge is strong on partnerships with public and private sector organisations and is enthusiastic about employer engagement. Top rated academic areas at Rockbridge represent the full spectrum of provision from engineering, physical sciences, medical sciences through to the humanities and social sciences. This range of expertise makes Rockbridge University ideally suitable for participation in the *third stream* policy agenda; the University has a solid research record and is very much aware of its importance to regional economic development. Considerable investment has been made by the University, over the last ten years, both in enhancing buildings and facilities of selected faculties, as well as in the establishment of a specialist knowledge and technology transfer centre. The University employs several specialist *third stream* managers and support staff.

Stapletower University

Stapletower is a new, post-92, university and it has invested substantially in a building programme. The University has grown in recent years and has developed new academic areas. Total HEFCE funding for Stapletower University is circa £40m. The main education provision is in art and design, social sciences, humanities, and, on a smaller scale, physical science. Relatively new education disciplines such as media production and media technology are well represented. Stapletower has improved its overall standing in the university league tables; moving up from its previous position in the lower region of the university listings. In terms of basic research output remains modest; however, this is not dissimilar from the performance of other new universities. Stapletower University has allocated resources to knowledge and technology transfer and is committed to applied research. The University has enjoyed support from the business community in its region and the University itself plays an important role in economic development. Stapletower was an early participant in the *third stream* agenda and in the late 1990s developed several TCS (Teaching Company Schemes) involving the University working collaboratively with a number of commercial organisations. TCSs have subsequently been renamed KTPs (Knowledge Transfer Partnerships). This new university is well positioned to contribute to the implementation of the Government's *third stream* education policy and employs several dedicated *third stream managers* and administrators.

Maintown College

Maintown College aspires to university status (taught degree awarding powers) and this is acknowledged in the College's strategic plan. It is recognised by the College that the Government does not intend to provide funding to encourage research in these new types of universities. In the absence of a research ethos, one would assume that *third stream* will become a priority for Maintown College as it strives to achieve university status; perhaps *third stream* will become Maintown's *second stream* (*third stream* as *second stream* was discussed in chapter 3 of this thesis). Maintown College offers a broad range of higher education courses with approximately fifty percent at FD (foundation degree) and HNC/D (higher national certificate/diploma) level. The areas of provision provided by the College include: creative & performing Arts; humanities, social sciences, and engineering and technology. Education studies is a priority and several new courses have been developed. Although the range of courses offered is broad; the College needs to substantially increase student numbers in order to achieve the necessary critical mass to become a university. Resource allocation at Maintown College has, in recent years, favoured the College's further education provision. HEFCE funding is much smaller at the College than at the two university host institutions, and the total is circa £5m. In terms of dedicated *third stream* support, at the time of interviewing, Maintown College was limited to one senior manager with *third stream* responsibility, who reported to a vice-principal with responsibility for business development, and one specialist commercial unit that focused almost entirely on none funded short courses. Although the College enjoys a large catchment area, the borough has a poor record of higher education participation and several

universities are within commuting distance. The following section reveals the findings that have emerged from the fieldwork conducted at the three host HEIs.

Results

5.2 The various themes that have been the subject of discussion with interviewees at the host institutions have been formed into three main categories; *Understanding Third Stream Policy*, *Barriers to Third Stream* and, finally, *Implications of the Third stream*. Examples of a complete transcript for an interviewee from each of the three host institutions can be found in the Appendices; a specimen interview transcript for a *third stream* manager can be located in Appendix E and specimen interview transcripts for academics are situated in Appendix F and G. Details of the findings from the fieldwork are presented thematically below. Key words and phrases in the quotes from interviewees in each of the three main categories below have been underlined in order to highlight their significance to the results.

Understanding *Third Stream* Policy

This category explores the views of interviewees at the three host institutions and incorporates their opinions as to how employers and the Government perceive the *third stream*. The level of understanding of *third stream* activities by the interviewees was pursued and the following comments are indicative of the views of the three managers. In the following extract from an interview with a *third stream* manager the *third stream* activities identified by the manager range from the exploitation of

intellectual property (IP) through to the traditional provision of full cost consultancy and training. The commercial exploitation of IP is normally more closely associated with research intensive universities. Knowledge transfer is generally more applied in nature (see chapter 2 of this thesis). Other significant issues raised by the interviewee are the necessity to incentivise academics to engage in *third stream* and the need to achieve a financial return:

Given the spend [on higher education] there should be a return... [on the] application, implementation and commercialisation of what has been created in the Institute... My original thought was intellectual property (IP)... to grab and exploit... we need to incentivise [academic staff], but in fact [at Stapletower University] there is not a lot of IP and it is far from the market. If not IP, then [we] encourage KTP (knowledge transfer partnerships) type activities and consultancy as well as direct provision such as bespoke training... at full cost... Incubators encourage “spin-in” rather than “spin-out”. (Stapletower University Manager)

In the case of academics at Maintown College the understanding of *third stream* coming through is quite varied; although some interviewees refer to the relationship between HE and business, some interviewees raise areas of provision such as foundation degrees or transferable skills, which are more usually associated with mainstream funding rather than *third stream*, or declare no understanding of this area of government policy:

This includes things like research into foundation degrees; although they do overlap with mainstream funding. It is about finding out what employers want... working with local organisations... The external programmes that we run with... [the names of three national companies are withheld]. The postgraduate team do some consultancy and external work. (Maintown College Academic)

The responses by Rockbridge academics generally reflected the University's ability and desire to exploit basic research outcomes and the following is a typical response:

We have made use of the new opportunities fund and there are several third stream projects taking place. One that I am pleased with was a project that was expected to generate £5,000 but, in fact, generated £3/4m with a surplus of £1/4m. (Rockbridge University Academic)

The fieldwork at Stapletower University generally revealed a broad understanding of the components of *third stream* activities that can be found in the literature, although, the focus at Stapletower is more *applied* than research based:

This is the third strand of HE funding and includes HEFCE funding such as University Challenge. This incorporates intellectual property; licensing; spin-outs... this is a science and enterprise agenda. More traditional universities have technology products; new universities are more concerned with knowledge [transfer]. The RDAs [regional development agencies] are more involved these days so there are more business and community links. (Stapletower University Academic)

It is useful to consider the understanding of *third stream* activities by interviewees at the three host HEIs with the views of commentators in the research literature. In chapter 1 of this thesis several definitions of *third stream* activities were identified (SPRU, 2002; IRUA, 2006; King, 2007; Armstrong, 2009). The definition provided by SPRU; 'the generation, use, application and exploitation of knowledge and other university capabilities outside academic environments' (2002:iii) is taken to include

intellectual property (IP) commercialisation and is seen by a number of commentators as an accurate description of what *third stream* policy is concerned with (Padfield, 2003; White, 2005; Sheil, 2005; Egan, 2008). Hatakenaka (2005) states that ‘there is no fixed recipe or “right answer” as to what comprises *third stream*’ (2005:7). Hatakenaka argues that ‘each university can and should respond differently’ to *third stream* policy and notes that early definitions of *third stream*, concentrating on IP exploitation such as spin-out companies, have now been extended to include examples of the synergy between *third stream* and teaching and research. Prince (2007), similarly, commenting on the implications of developing *third stream* for university schools, notes the association with ‘programme design, accreditation and validation processes’ (2007:754). Commentators increasingly refer to community as well as the teaching-aspect of the *third stream*. As stated in chapter 1 of this thesis, Frost (2008:1), when appointed to the role of Head of Business and the Community at HEFECE, concluded that one individual’s, or an HEI’s, definition ‘can be very far from another’. Frost warns that efforts to define terms such as *third stream* can be reductionist (ibid:2).

The diversity of definitions and understanding of the nature of the *third stream* identified above is also reflected in the responses from interviewees in this study. The three *third stream* managers who were interviewed have, as could be expected from the position they hold, identified the main areas of *third stream* activity that are related to the exploitation of intellectual property (IP) and knowledge. Whilst Maintown College and Stapletower University particularly commented upon KTPs (knowledge transfer partnerships) Rockbridge, a traditional

university, has focused upon its range of specialist institutes which draw from the Universities research base. Wealth creation was mentioned by one Stapletower interviewee; despite the frequent occurrence of reference to wealth creation in government policy documents this reference is untypical of the interviews at any of the three host higher education institutions in this study.

The following comments by an interviewee describe the interviewee's understanding of what employers are looking for with *third stream* and a view of the value that companies place on this area of an HEI's provision:

Employers are only interested if there is a direct benefit for them; cause and effect. They don't want to buy high level activities; HEIs value scholarly activity but employers value the output; they want shit loads of money. A paradigm shift is needed if [an HEI is] to grasp third stream. (Stapletower University Manager)

The somewhat direct response above is accompanied by a comment of an academic which is indicative of the many:

I would say that employer's view will value third stream in the medium to high range. This is based upon my own experience... they have their own agenda [profit/wealth creation]. (Stapletower University Academic)

It is clear from the comments above that the interviewees recognise, not unexpectedly, that commercial organisations are very much focused upon making a profit and that any service that an HEI can provide which can contribute to this objective will be seen as attractive by the company. A “what's in it for me” approach by commercial companies is not in doubt

for these interviewees and that businesses have their own agenda. *Advice from America* in section (2.7.2) of this thesis includes the following recommendation which is pertinent to the sentiments expressed below:

‘Any partnership agreement between a commercial firm and a university should be well thought out and documented in a binding contract. It is unhelpful to negotiate intellectual property rights after the research breakthrough has occurred. The importance of achieving trust between both parties cannot be overemphasised’

Commenting upon the experience of USA higher education institutions collaborating with commercial organisations, Cohen *et al* (1998) point out that whilst universities want to disseminate the findings of research, companies, driven the profit motive, prefer confidentiality (cited in Adams *et al*, 2001:74). The study by Cohen *et al* revealed that research in universities that are supported by commercial organisations is more applied and that the publication of papers is more restricted (*ibid*). Mansfield (1998), in a study of academic research and industrial innovation in the USA, suggests that the reduced time lag between research and commercialisation may be due to universities undertaking ‘more applied and short-term work, often geared towards relatively quick applications’ (1998:775). Although there are advantages for HEIs and companies in collaborating, the needs of higher education and of companies, whilst having a degree of overlap, are diverse.

This final element of the *understanding third stream policy* category focuses upon the interviewees’ view of the Government’s perception of *third stream* achievements. The Government’s perception of HEIs’ *third stream* performance was explored in chapter 3 of this thesis. The view

that emerged in chapter 3 is that the UK Government has a positive perception of *third stream* activities. This conclusion was tested in the fieldwork and the comments below demonstrate how the interviewees' generally interpret the Governments perception of *third stream* policy success:

The Government spins so it is difficult to say; positive spin but I am not sure. Measures of performance are arbitrary. (Stapletower University Academic)

The Government thinks that it's doing a great job but are these the right targets [HEFCE performance targets]?... there is no tracking of the success of businesses [that work with universities]. (Stapletower University Academic)

A minority view is given below:

There is enough activity to justify Government confidence. (Stapletower University Academic)

The view of the interviewees generally corresponds with the conclusion arrived at from chapter 3 of this thesis, that is, the Government believes that *third stream* policy is succeeding as measured by the performance of HEIs in this area of activity. The views expounded by the interviewees include opinions that Government is placing a “positive spin” on *third stream* performance; however, one comment above is that there is enough activity to justify this confidence. Some interviewees were not entirely convinced and one person suggested that the ‘measures of performance are arbitrary’, whilst another questioned whether Government/HEFCE targets are the right ones. The comment regarding tracking the success of

those businesses who have collaborated with universities has a certain appeal, however, there can be many variables in measuring the success of a business and it may be extremely difficult to isolate the precise level of contribution to a company's success of collaboration with an HEI from that of other critical success factors.

The picture that is emerging in this category is that whilst the Government believes that its *third stream* policy is working, interviewees in this study generally remain unconvinced. Also, the understanding of what *third stream* involves is varied in the host HEIs. The view of the interviewees reflects a belief that the motivation of employers is governed by a desire to follow their own self-interest which will invariably be coloured by the need to generate profit. This commercial intent by companies is not unexpected and is consistent with the findings of the Lambert Review (2003b). The following category explores the barriers that exist to the successful implementation of the *third stream* at the host institutions.

Barriers to *Third Stream*

In order for any aspect of government policy to succeed it is necessary for the major barriers to implementation to be identified and this category focuses particularly upon three factors concerning; the willingness of academics to engage, policy dissemination and funding issues. The following interviewee comments are representative of the predominant views of the interviewees at the host institutions in respect of the motivation of academics to participate in *third stream* activities:

Staff may be willing but not able or perhaps have other interests... I categorise staff [with third stream] as (1) not interested: a large number; (2) interested but not experienced/lacking technical ability; (3) interested, and with some expertise, but couldn't be put in front of [business] people. This type of person could be put with a go-between and, finally; (4) staff who have everything [academic and technical expertise, and the ability to deal directly with business people]; the big problem is that the best people [academics] are wanted for everything [such as programme development and research] and there is an opportunity cost of using these staff. Sometimes staff left to join partner companies. This group of staff ["best people"] is 10% max.... [to achieve more] would need realistic funding stream by government and institution needs to value. (Maintown College Manager)

This varies depending on the individual and the department; some colleagues are supportive of third stream. Some staffs (and externals) don't know where the science park is or that it is University [owned]; there are some silos. We also have partners in other parts of the country... we wanted to build [this Centre] on partnerships. (Rockbridge University Academic)

Quite poor; it is a smaller subset of academics because of different culture... this frightens some academics. Academics need to be "cherry picked" and nurtured... a group within a group. (Stapletower University Academic)

Several important issues have been raised by the interviewees which, if they were replicated across the higher education sector, would be a cause of concern for both the Government and individual HEIs. A particularly important issue that has emerged from the interviews, and which limits the level of implementation of *third stream* activities in a HEI, are the low estimates of the number of academics who are willing and competent to engage in *third stream* activities. The perceived lack of incentive for staff involvement is a key element of this issue and is potentially critical

to the successful implementation of *third stream* policy. Concerns that have been raised by other interviewees include the level of workloads/other priorities, as well as the role of the Dean. The above findings provide an estimate of the number of academics willing to engage in *third stream* activities to be approximately 10%; although, another interviewee suggested 30%; whilst one further interviewee suggested that academics at his/her university who are “able” is only a proportion of the 10% of academics who are willing to engage. The majority view held by several interviewees was that they cannot see the relevance of *third stream* to academics or are reluctant to become involved; it is clear that a culture which embraces *third stream* is not predominant at any of the three host HEIs. Warner and Leonard (1997) take a similar view to the Stapletower University interviewee above, who declared that ‘academics need to be “cherry picked” and nurtured... a group within a group’, in that they suggest that ‘academic-based commercial organizations have to be born, nurtured and supported within the institution’ (1997:41).

The culture surrounding *third stream* activities is identified in the research literature as incorporating concepts such as academic capitalism (Slaughter and Leslie, 1997) and entrepreneurial universities (Clark, 1998a; Clark, 1998b) (see chapter 2 of this thesis). The terms academic capitalism and entrepreneurial university often appear to be used interchangeably and both advocate technology transfer with commercial organisations; Slaughter and Leslie (1997:9), however, argue that academic entrepreneurialism fails ‘to capture fully the encroachment of the profit motive into the academy’. Clark (1998b) suggests, as reported

in chapter 2 of this thesis, that entrepreneurial universities have ‘a better chance to control their own destiny’ (1998b:13). New managerialism, with its emphasis on a ‘managerial’ rather than ‘collegiate’ style of governance (Scott, 1993:20), and ‘drawing on the practices and discourses from the private for-profit sector’ (Reed and Deem, 2002:126), is also an influence on the culture of higher education institutions. There is a division amongst commentators as to the desirability of higher education collaborating with the private sector for commercial gain. Warner and Leonard (1997), who both have considerable senior management experience of university commercial companies, report that they have not ‘found an area in any further or higher education institution where income generation, even in the narrow sense, is not possible’ (1997:9).

In the following discourse the issue of incentives has been raised both by *third stream* managers and academics. Both groups are overwhelmingly in favour of some form of reward for staff engagement in *third stream* activities:

*Incentives are necessary for academics to engage in third stream;
... There is Centre versus Faculty tension here; the quality of information is difficult [of the expertise of academics]. We reward innovators and the emphasis is on protecting patents rather than exploiting intellectual property. We need further investment and to keep academics involved. (Rockbridge University Manager)*

The University needs people like [name of an academic withheld]... internal staff have to risk their career. Academics are entitled to spend a set number of days per year on external [paid] work but they have to ask

permission... [despite this] there is a black-market of outside work. Lots of commercial work doesn't get to individuals' pockets. I would like to see staff engage in REACHOUT [a HEFCE third stream funded activity] or research; not consultancy. (Rockbridge University Academic)

I would say that only one or two members of staff in each faculty are keen to get involved in third stream work... the University needs to sell [third stream] to academics to get them onboard... it needs to demonstrate the benefits to staff such as buying their time [i.e., reduced teaching] and the opportunity to attend conferences. (Stapletower University Academic)

It appears that money is not the only consideration and that the perceived limitations in career progression may also be a concern for academics when considering whether to engage in *third stream* activities.

Alternatives to money incentives, it is suggested, may include the reduction of other aspects of work load or approval to attend conferences. Although one interviewee suggests that providing incentives for academics engaging in *third stream* activities is not always necessary, another highlights the availability of black-market outside work. If the take-up of unofficial outside work is wide spread this can have financial implications for the employing HEI. Also, there is the possible threat of disciplinary action for any academic who is in breach of contract for conducting such activities. Wilson (2000), commenting upon *third stream* developments, suggests that 'career management for academics will be an increasingly important issue' and that 'staff recruitment and retention are the critical issues' (2000:41). Wilson recommends that UK universities should follow the American example of allowing academics a number of consultancy/professional activity days as well as benefiting from any comparability with partners in any alliances (ibid).

The issue of incentives appears to be a significant emerging issue. The importance of incentives was probed in some depth with a broad range of interviewees and, although the importance of incentives was strongly held, a small minority of interviewees were sympathetic to the following view:

There is no pathway for incentives [at the University]. I don't think that there should be such incentives... why should there be? Incentives are not an issue for third stream or "normal work"... do normal routes have incentives? Just be happy with the job. (Stapletower University Academic)

An interesting view put forward in the Stapletower University Academic extract above is that incentives for staff are not necessary. It is useful to compare this interviewee's opinion with that of Warner and Leonard (1997) who, when discussing the engagement of academics in commercial activities, state that 'the [academic] department income generation strategy will be profit-orientated and must contain incentive elements which will ensure the full support and participation of the personnel who will spearhead any special initiatives' (1997:40). Although Warner and Leonard (1997) claim that 'straight cash payments are clearly preferred by staff' they suggest that incentives to academics may go beyond money and range from 'subsidy of conference or travel costs, time off teaching duties (by purchase of part-time hours), to provision of facilities or equipment to improve working conditions' (ibid). Notwithstanding their enthusiasm for staff incentives, Warner and Leonard (1997) acknowledge that many HEIs 'are presently rethinking

the rewards that are passed on to staff and whether there should be rewards at all' (1997:60). The reason given for this position by some HEIs is that there is an argument for refraining from giving additional rewards when new exclusive service contracts for academics make it 'unnecessary to pay them again for work that should be done within the contracted terms of service' (ibid). Warner and Leonard make it clear that they are uncomfortable with such a position (ibid). At Rockbridge University the issue of suitable rewards for *third stream* is being addressed by both a faculty management team and senior management:

In our faculty we try to align third stream to the research interests of individuals; often we can charge more this way... if a colleague has expertise in an area why not exploit it... this achieves higher value. With KTPs [knowledge transfer partnerships] staff usually get half a day [timetable allowance] a week for each project... [compared] with consultancy when colleagues ask if they will get money for this activity. I know about an incentives document [being produced in the University] but I am not aware of it [being available]. Setting up a centre [in this academic area] has helped us create links with industry.
(Rockbridge University Management)

Although the above contribution by a Rockbridge academic can be seen as positive in *third stream* terms, the researcher was in fact able to acquire a copy of the University's incentives document. The ready availability of this important internal *third stream* document raises a question of policy dissemination at the university. Rockbridge is not alone and the issue of dissemination, like academic incentives, is proving to be a significant issue across the three host HEIs. This was demonstrated by the following responses when interviewees were

questioned by the researcher about their familiarity with Government *third stream* policy documents:

Moderate really... In the past there was a constant flow of DTI (Department of Trade and Industry) mixed with regional Euro literature and documents. (Maintown College Manager)

I don't know of any. (Maintown College Academic)

Through reports sometimes in the Times Higher Education Supplement (THES). (Maintown College Academic)

I know of the Lambert report (spin-outs are not the Holy Grail); DTI Innovation report; CBI; Design Council; RDAs and others. (Stapletower University Academic)

We get emails and I attend conferences. In the past I have received DTI [Department of Trade and Industry] publications. (Stapletower University Academic)

The dissemination of *third stream* policy documents through to academics is an important matter as the Government, and management at HEIs, are reliant upon the take-up of academics if the policy is to succeed. It is important to note that those academics interviewed, who have had access to these particular Government publications, collectively refer to a wide range of documents. The breath of documents may on one hand be seen as a good thing, however, which documents are the most significant and why haven't all staff across the institution had access? Is there a bottleneck in this process? The experience of the researcher in this matter is that a copy of government policy documents is always dispatched to the vice-chancellor or principal and, frequently, to dean of faculty or head of school. Is it in the interest of a dean to promote *third*

stream activities to his/her most research intensive staff; particularly in the approach to a research assessment exercise? Perhaps, as Warner and Leonard (1997) state, that ‘unfortunately, most educational institutions are quite bad at internal communications’ and that this may be the real problem (ibid:10).

The evidence from the *dissemination of policy document* category above reveals that there appears to be a lack of consistency in how government education policy documents are cascaded through the host institutions. As a consequence, the fieldwork progressively focused more closely on this area in order to tease out what happens to the documents at faculty/school level and, in addition, to ascertain the provision of any special *third stream* briefing meetings or training events. The following comments are indicative of the comments made by interviewees at the three host institutions:

No; there have not been any of these policy documents coming my way. Not directly... the only meeting that I can remember was about KTPs [knowledge transfer partnerships]. (Maintown College Academic)

I never have received this [third stream information]; I found out about it externally... it is a pity because we could have brought in intelligence... people are too compartmentalised. I cannot recall any special events on this; I am 90% + sure I did not. Joined up working is needed... disseminate this [third stream information] until it becomes culture.’ (Maintown College Academic)

I don’t think that third stream information is getting through; people are more concerned with their own research, almost to the extent of being detrimental to students... it’s a big problem [concentrating solely on

research] and it's been like this for some time. (Rockbridge University Academic)

I have not personally been involved in third stream activities. I don't think that policy documents are routinely included in the information that is received by faculty staff... although it [third stream] is raised at faculty meetings... emails [as a means of dissemination] is not good. (Rockbridge University Academic)

No I don't [receive third stream documents] but then I am not proactive myself. We have not had any special training events about this type of work. The trouble is information overload [in general]... email overload is a particular problem. (Stapletower University Academic)

The reason for exploring this issue further was that, as the main deliverers, the academics need to be made aware of *third stream* policy; it was thought that if academics do not have an understanding of the policy, and the benefits that it may bring, then this will be a major barrier to the successful implementation of the *third stream*. The results of this aspect of the study, generally, reflect a weak performance in respect of the internal promotion of this core funding stream towards staff at the three host HEIs.

The willingness of academics to engage in *third stream* activities, and the extent to whether they have access to *third stream* policy documents, have been explored in this category. The final element of this “barriers” focused category is concerned with the funding of *third stream* activities. Interviewees were asked if they support competitive funding:

I think that with a 5-10 year strategy there should be some recurrent funding but would HEIs become complacent? The issue is how to

achieve a balance... the way forward is base load funding plus special funding. (Stapletower University Manager)

It shouldn't be competitive if a university is already running third stream. A change of Government is bad; we need longer term funding. (Stapletower University Manager Academic)

It should be, although, there should be part formula funding for stability; to keep staff. (Stapletower University Academic)

Funding should be formula driven in order to reduce uncertainty... but will existing HEFCE third stream funding streams continue? There will always be third stream but the question is distance [amount and length of funding stream]. I was given a fixed number of years to establish knowledge and technology transfer at the University. ... now we need investment for extra project staff and to develop a [University wide] strategy. (Rockbridge University Manager)

The question of funding for *third stream* activities came up quite early in the fieldwork and the issue of competitive or formula funding *third stream* activities has produced a varied response from interviewees when asked if they support competitive funding. It is not uncommon for academics to desire increased funding for either core areas of provision or special projects. What was interesting in these interviews is not necessarily whether the preference is for competitive or formula funding, but rather the need for clarity regarding the continuity of funding for this HEFCE core theme. As reported in chapter 1 of this thesis, government funding for the *third stream* continues to rise and 'total committed *third stream* funding between 2000/01 and 2010/11 amounts to £1 billion (at 2003 prices)' (HEFCE, 2009:3). Although this funding commitment to *third stream* activities can be seen as positive, a significant issue for

individual HEIs is whether they will continue receive a proportion of this funding stream. It would appear that several of the interviewees are not greatly concerned either way on the two modes of funding; the main concern is that the funding of *third stream* should be part of a long-term strategy and that it should be set at a sufficient level to sustain a core level of staffing, at least until this area provision becomes sustainable. A strongly put view was that funding could be part formula, to cover core staffing, and part competitive to provide encouragement for HEIs to innovate. Other views expressed by interviewees were; fairness in the allocation of funding and the potential danger to the continuity of *third stream* by any change in government. The following category considers how the *third stream* has affected each of the host institutions.

Implications of the *Third Stream*

New managerialism, as previously mentioned, has its roots in the practice of the private for-profit sector. It seems reasonable to expect that increasing collaboration between higher education and business (Lambert, 2003b) is likely to result in a more business orientated style of management in some higher education institutions. The following findings refer to the extent of any change in management style due to the *third stream*:

Historically [at other HEIs], there have been protocols involving deans who make life difficult by saying that you can't take my member of staff. It only worked by being participative; providing development programmes on selling and negotiation... became easier once you got going; you need vice-chancellor buy in. You can't conscript [to third

stream activities]; must get volunteers or it is a nightmare. It takes time and you need the soft skills end of relationship management.
(Maintown College Manager)

A cajoling, influencing and persuading approach as opposed to a more autocratic style [is required]. There is the issue of expectations of academics; the workload of teaching and research doesn't apply to third stream. There is not an expectation of doing third stream so you are starting from a position of disadvantage. (Stapletower University Manager)

Yes, there is a greater degree of commercial awareness... academia is increasingly commercial and business like. (Maintown College Academic)

Most “three leggers” [those involved in third stream] have industrial experience... more proactive... business managers [at universities] have had an impact but some are going native... Some academics are blinkered [to what business employers want]. (Stapletower University Academic)

Russell (1994) refers to changes in how education operates as ‘creeping managerialism’ (1994:337). Deem (2001) refers to the use of ‘techniques, values, and practices derived from the private sector of the economy to the management of organisations concerned with the provision of public services’ (2001:291). It is suggested by Marginson and Considine (2000) that friction can occur between management and academics and that ‘the fault-line... falls somewhere between faculty dean and individual staff member’. It is also noted that heads of department have to address the difficulty of experiencing divided loyalties (2000:64).

In the above discourse, taken from interviews with academics and *third stream* managers, there appears to be some recognition that *third stream*

activities do necessitate a different style of management that is more compatible with the ethos of commercial partners and clients. What is clear is that the interviewees at the three host HEIs are generally of the view that HEIs cannot conscript staff to the *third stream* agenda and that influencing skills are necessary in order to attract volunteers. The issue of workload is raised once again and the view is expressed that academics expect to have to undertake teaching and research but, however, that is not true of the *third stream* agenda. The role of the dean in staff allocation is described as a possible barrier to implementing the *third stream* and it is stated that top management “buy in” is needed if *third stream* is to prosper. The need for management training is also expressed. In assessing the attributes of academics one interviewee suggests that some staff are blinkered as to what employers want.

The literature review in chapters 1 and 2 of this thesis has raised a number of concepts, issues and trends regarding the development of *third stream* related activities. A selection of such matters could include the exploitation of intellectual property, for example spin-out companies (Wright, 2004b; Wright, 2004c); technology transfer (Slaughter and Leslie, 1997; Bremer, 1999); entrepreneurial universities (Clark 1998b) or, possibly, the expansion of *third stream* beyond commercialisation (SPRU, 2002). The interviewees’ views of the specific *third stream* issues at their own institution are as follows:

We [Maintown College] have started third stream but we are embryonic; this is because of the lack of resources... compared to the [regional city] universities, we do not have the same level of support so Maintown loses out. RDA and local authority work has been good. ...

we chased funding for worst reason; finding something [projects] to fit the funding [opportunity]. (Maintown College Manager)

The University is bereft of easily identifiable and exploitable activity. It is a good teaching institution with some pockets of good reputation; the [name withheld] Centre is well thought of. A [name withheld] Institute is being developed as well... what else could be tapped into? TCSs (teaching company schemes; now called knowledge transfer partnerships) were a useful vehicle to exploit'. (Stapletower University Manager)

An issue is rewards and recognition...we need a few visible people. The RAE [research excellence framework] is not the way forward; the 2008 exercise will be a watershed... research must be at the centre of third stream... peer esteem is important. Nationally, the future issue is the new [non-research] universities. (Rockbridge University Academic)

We need to develop a virtual office scheme [for business support] with phone lines etc to hook businesses in. There is a reluctance to reward and there is a glass ceiling [in third stream] for those people from industry... One target at the university is income generation; it should be profit. The vice-chancellor is very anti-spinouts. The attitude to risk is a problem; return versus risk... people want a return without the risk. (Stapletower University Academic)

The interviewees were engaged in discussions regarding any specific *third stream* issues facing the interviewee's own institution. The individual responses provided a cocktail of issues including; funding and the low level of resources; a lack of easily identifiable and exploitable activity; the issue of rewards and recognition and the need for what could be described as *third stream* champions; a reluctance to reward *third stream* activity is compounded by the perception of a "glass ceiling" for such people; spin-outs are discouraged by the vice-chancellor at one of the host HEIs and one other interviewee pleaded for some institutional

direction as to what *third stream* policy is about. This is a further example of the complexity of policy-making and policy-implementation.

The interviewees were given the opportunity to add to the HEI specific *third stream* issues above with any future topics that are seen as being relevant. A range of views were exhibited by the interviewees:

A risk to the university sector is a lack of understanding of the timescale and resources needed [for third stream]... and [also needed are] less measurable aspects; clear, consistent long-term funding/intervention strategy... needs to be long-term not short-term.. (Maintown College Manager)

This is an increasingly important activity and there is a blurring of the edges [with research]... at what point do they [third stream activities] become third stream. Third stream will become increasingly important to survival [of HEIs]. In the future there won't be a distinction between 1st and 3rd [HEFCE funding streams]; we will [all] be serving a customer... increasingly matching product to customer needs and the customer pays. (Stapletower University Manager)

There is inertia in the economic system; the way that industry sees education. The USA model of support by industry should be followed... alumni works better. (Maintown College Academic)

There should be better communication between different areas within the College; for example, management/business and academic. We [academics] need a greater understanding of "why"... what Government policy is and its relevance to academic staff. (Maintown College Academic)

My own Faculty needs a greater awareness [of the third stream related Centre] and I would like to see a greater presence across the Faculty. There should be integration between teaching and learning with third

stream; involve commercial organisations in the IT field... form a partnership. (Rockbridge University Academic)

Faculties need to work together more; managers don't all work together... they have to do what the Dean wants. (Stapletower University Academic)

The responses were quite broad including (once again) the resourcing of *third stream*; the need for the link between business and academics to be closer (the USA is given as a model by one interviewee); there should be improved communication within the HEI and greater clarity as to the relevance of *third stream* to the academic. A positive comment by one interviewee was that the importance of *third stream* to the University's survival will increase and that *third stream* will be less distinct from basic research and teaching and learning. The latter point is consistent with Hatakenaka's view (2007:7) that there is synergy with both teaching and research. Whilst this comment is encouraging for supporters of *third stream* policy, a plea for faculties to work together more closely is made by another interviewee who laments that academics have to do the dean's bidding (which may or may not include *third stream* as a priority). This snapshot of the interviewees' views of future issues at the HEI, whilst revealing, does not have to be seen as being prohibitive; all of these points, with the exception of funding are largely within the control of an HEI and, as previously discussed, HEFCE is committed to a continuation of the funding of *third stream* activities (HEFCE, 2009).

The Emergent Propositions

5.2.1 A significant amount of rich data has been unearthed from the fieldwork undertaken in this study. This has enabled the researcher to

refine the data from key words and themes into clusters and, finally, to identify the elements of a definitive position on the adoption and implementation of *third stream* activities by higher education institutions participating in this study.

It is useful, at this point, to reflect for a moment on how the data from the interviews compares with the review of literature in chapter 1 and chapter 2, and the perspectives of government in chapter 3 in this thesis. Whilst it is clear that *third stream* higher education policy is gradually working through to academic staff at the three host institutions, more so at Rockbridge University and Stapletower University and less at Maintown College, there is little evidence to suggest that any of the three institutions have fully embraced either academic capitalism (Slaughter and Leslie, 1997) or the concept of the entrepreneurial university (Clark, 1998a; Clark, 1998b). All three host institutions appear no way near to being, what Marginson and Considine (2000:239) refer to as, 'aggressively entrepreneurial' (2000:239). There are, however, clear indications, at the two university host institutions in this doctoral study, that technology transfer is expanding and this concurs with a similar trend identified at other universities by Bremer (1999), cited in Carlsson and Fridh, 2000).

Taking the definition of culture provided by Baragh et al (2000:24); 'values, norms, customs and practices (ways of behaving) which influence the way work is arranged and formed', it is not possible to detect any significant changes to culture at the three host institutions. Ormerod's (1996) view is that, for financially motivated *third stream* staff, they have a 'required motivation, behaviour and ethics [that] are

quite different from those required of a researcher' (1996:9). This view is reflected at Rockbridge University which, despite its *third stream* successes, academics generally place more emphasis on research rather than the exploitation of research. Nixon (1996) states that changes affecting HEIs have resulted in 'fragmentation of the academic work place' and that the role and professional identity of academics have been profoundly affected (1996:14). Whilst this sentiment was not strongly represented at the host institutions, interviewees did express the necessity for a different style of management in order for the institution to relate to business organisations.

The government's ability to formulate and implement *third stream* policy, a citizen might think, should be a straightforward affair; decide on policy content, allocate funding and disseminate the policy and funding opportunities to HEIs and their academic staff. A major obstacle to this, as Levin (2001) suggests, is that 'policies that emerge from the political process are rarely clear and unambiguous' (2001:143). The complexity of policy-making is recognised (Levin, 2001). Terms used in the government documents analysed in chapter 3 of this thesis, as demonstrated, frequently refer to global markets, wealth creation and competition. In the view of the researcher of this study, the lack of clarity and of *third stream* policy, coupled with a rejection of terms such as 'wealth creation', is part of the problem in ensuring the adoption and implementation of *third stream* policy at the three institutions. In the interviews, academics have not shown a significant interest in globalisation, competitiveness or wealth creation. This is not to say that these are unimportant, but that the government's message is not getting

through. The issue of dissemination of policy and incentives for staff to engage in *third stream* activities at the three host HEIs are addressed below.

Over the last twelve years, the current United Kingdom Government has progressed with the *third stream* agenda and this is evident both from the literature review and empirical research undertaken in this study.

However, what is apparent from this study is that there are a number of academics at all three of the host institutions who, interviewees believe, have failed to be ‘captured’ by the Government’s *third stream* policy.

Whilst there is no attempt to generalise from this qualitative research; it is, in the view of the researcher, significant that there is commonality across the three institutions regarding the lack of effective dissemination of *third stream* policy information and a concern at the lack of incentives for individuals to support this aspect of higher education policy. The attractiveness or not of *third stream* activities has been discussed in the review of literature in chapters 1 and 2.

It is apparent, from discussions with the interviewees who have participated in this study that across the three host institutions there is generally a lack of clarity as to what *third stream* funded activities are. A major contributor to this situation appears to be the absence of a systematic approach to their dissemination of *third stream* policy documents and, possibly, the absence of targeted *third stream* meetings and training events. Emails appear to be largely ineffective as a means of disseminating *third stream* policy and related initiatives. Levin (2001) suggests that, in addition to funding opportunities, consultation is a way

of inducing the implementation of government policy and that ‘governments can engage in a variety of kinds of consultation as a way of building understanding, improving commitment or trying to deal with a particularly difficult aspects of implementation’ (2001:153). Levin also advocates the use of training as a means of promoting attention to particular policy goals. (ibid:152).

Although the picture that has emerged from the interviews at all three of the host institutions is that incentives, particularly in terms of career progression, are generally seen as being beneficial; it far from certain that a structure of incentives for *third stream* working, on its own, would significantly increase the numbers of academic staff who might be prepared to engage in this core area of higher education provision. Expansion of *third stream* would likely be achieved if there was more effective dissemination of Government policy through to academic members of staff. A key issue is why then, when *third stream* managers at the host institutions are reasonably well informed about *third stream* activities (if not policy), doesn’t the Government’s message on this agenda get through to mainstream academics? Whilst there has frequently been reference to the importance of funding by interviewees, it should be noted that this funding stream will not be fully effective without the commitment of academics. The more entrepreneurial academics at the three host institutions may well be the ones who are engaged in ‘black-market’, outside activities, on their own behalf. An important question, particularly for senior management at Rockbridge University, which has a comprehensive employee incentive strategy, is how do you motivate

those academics involved in this unofficial work to bring the income into the institution and employ their skills to the benefit of the institution?

In order to achieve the full potential of *third stream* policy at the three host institutions the following propositions, based on evidence from this study, should be considered:

(1) The Government's message is not working through to individual academic and technical staff as to what *third stream* activities involve and the importance of these activities to the Institution and the local and national economy.

(2) Managers and academic staff at the three host institutions have suggested that there ought to be consideration of the establishment of a system of rewards for staff who participate in *third stream* activities and that this should recognise the opportunity cost, such as career progression, for those academics that prioritise *third stream*.

(3) Informing and incentivising staff to become involved in the *third stream* agenda is of no value unless academics, and other employees, are freed up from some of their other duties in order to participate in this aspect of the Institution's work. Deans and Heads of School are critical to the process of work prioritisation and work distribution, as well as the dissemination of *third stream* information in general.

The need for incentives for academics to engage in *third stream* has also emerged from Government policy documents that have been considered

in this study and it has been noted that HEFCE is exploring this issue (HECFE, 2002; HEFCE, 2007b). In 2009 a report was produced for HEFCE on the effectiveness and role of *third stream* funding. This report (HEFCE, 2009/15), based upon a survey of higher education institutions, includes an analysis of the motivation of academics to engage in *third stream* activities. Whilst the growing importance of *third stream* to HEIs is acknowledged in the report; it is made clear that ‘research and teaching are the competitive advantages’ and that, depending on an HEI’s focus, this will govern the institution’s reputation and its national and global ranking. Accordingly, improvements in the quality of research and teaching are seen as being of ‘paramount importance’ (2009:57). It is noted that ‘it takes time to create institutional structures [and] change the set of people and capabilities’ (ibid:68). It is reported that ‘a primary cause of failure’ of knowledge exchange (KE) in HEIs is that they have been unable to generate ‘buy-in’ from academics’ (ibid:72). To counter possible failure, a ‘critical challenge is to increase the number of academics who want to engage with external organisations’ (ibid:88). The report for HEFCE revealed that ‘only 18% of academics were motivated by increasing their personal income’ and that only 23% of academics were seeking to use knowledge exchange in order ‘to look for business opportunities for their research’ (which has income implications) (ibid:93). Although these figures could be interpreted as academics giving a low priority to financial incentives, it should be noted that 70% of academics, when questioned about their attitude towards the commercialisation of research, responded positively to the proposition that academics should be free to benefit financially from the commercial application of their research (ibid:101). The report, commenting on

academics' willingness to engage in *third stream* activities, also notes that 'a lack of confidence and *perceived* lack of capability can be powerful barriers to engaging with external organisations' (ibid:110). In this context, the options of training and continuing professional development can be seen as beneficial (ibid:83). A conclusion in the HEFCE report is that incentives for academics 'are important instruments for influencing academic attitudes and culture' (ibid:105).

The views expressed in the HEFCE (2009) report above are an example of how the results of this study have been validated by the use of triangulation. The desirability of incentives for academics to engage in *third stream*, as with HEFCE above, has been identified as a significant concern in both the interviews with academics and those with *third stream* managers. A number of academic staff have raised incentives as an issue for them and all three *third stream* managers who have participated in the study have verified that the general lack of incentives for academics is a critical success factor if *third stream* education policy is to flourish. This also reflects the view of commentators in the literature review (Warner and Leonard, 1997). Another issue frequently identified in the interviews is the need for stability in the staffing of *third stream* activities and this has been linked to the need for the continuation of the HEFCE *third stream* funding stream. Triangulation was completed by the researcher addressing his own potential bias as well as securing respondent validation by the *third stream* managers (see chapter 4 of this thesis).

It should be noted that the managers interviewed at the three host institutions that have specific responsibility for *third stream* activities can, reasonably, be expected to be amongst the most knowledgeable people at their institution regarding this distinctive area of an HEI's activities. It is interesting, therefore, to observe the degree to which significant fields of knowledge in the literature, such as entrepreneurship, culture and technology transfer, come through in the interviews with the three managers; frequent *third stream* topics in the literature such as the exploitation of IPR (intellectual property rights), spin-out companies are identified by the managers. The level of understanding that academics have of the *third stream* is somewhat different to that of the *third stream* managers who were interviewed. As there is no requirement for academics to engage in *third stream* activities at the three host HEIs then, as could be expected, the knowledge of this policy area by individuals is more varied. This is an example of the complexity of policy-making, and policy implementation, as discussed in chapter 1 of this thesis. Some staff are unfamiliar with the detail of *third stream* and had a narrow view of the policy area; omissions occurred such as there being no mention of intellectual property or the exploitation of research by some interviewees. Notwithstanding the variability in interviewee responses, it was evident from the outset of the field work that the interviewees would provide a rich source of data and that the issues raised by the interviewees would have clear implications for adoption and implementation at the host institutions.

The following section, 5.3, briefly concludes this chapter before the final conclusions of this study are gathered in chapter 6.

Conclusions

5.3 This chapter has provided a detailed account of the empirical research carried out at the three host institutions. The selected research method and data analysis used in this study has enabled the researcher to formalise his thinking and determine explanations for either the adoption or non-adoption of *third stream* policy. The application of grounded theory, involving intuition and feel, has enabled the researcher to explore areas of commonality, or contradictory themes and patterns, between the various actors who have participated in the study. The interviews frequently revealed a lack of familiarity with the term *third stream* even when the interviewee understood the components of *third stream*. This was particularly obvious in the interviews at Maintown College and a common aside was ‘I should know more about this’ (i.e., about *third stream*). In some interviews, less knowledgeable interviewees used the occasion to gather information from the interviewer; in one interview, for example, the interviewee asked the interviewer how he could learn more about *third stream* and whether there are any *third stream* development opportunities that he might attend. On some occasions individual interviewees displayed either a greater understanding or ignorance of *third stream* policy than expected. Data analysis was complicated by the range of responses and the researcher’s desire to avoid quantifying data.

The three host institutions have all been involved in *third stream* activities, albeit at different levels; Maintown College tends towards income generation such as full cost courses, whilst Rockbridge University is heavily involved in both research and the exploitation of

research outputs. Staple tower University, like many new universities, is more involved with knowledge and technology transfer rather than basic research. The *third stream* experience of the United States of America is discussed in section 2.7 of this thesis and commentators report both a sophistication of the research and technology base and clarity of policy (Gray *et al*, 2001). It is important to note that any comparison of the USA *third stream* experience with that of the United Kingdom must compare like with like and there is no suggestion that any of the three host institutions in this study can be reasonably compared to, say, Massachusetts Institute of Technology (MIT) or Stanford University in the United States. That said, it is reasonable to conclude from the evidence gathered in the literature review and the fieldwork that progress in this area of government education policy is generally more advanced in the USA than in the UK (Duggan, 1996). This is certainly true of the three host institutions in this study; Rockbridge University comes closest to the examples of USA universities detailed in chapter 2 of this thesis as, stated above, it is a research based institution that engages in the exploitation of intellectual property and works in collaboration with business organisations. The advice from the USA in chapter 2 of this thesis, such as encouraging the mobility of both knowledge and researchers between university and commercial partner, is still at the infancy stage at the HEIs participating in this study.

The fieldwork results, which have been validated by respondents, have highlighted the need for more effective dissemination of *third stream* policy to individual academic members of staff. The analysis of discourse, following Ball (1993), in chapter 3 of this thesis reveals that

terms such as “competition” and “wealth creation” are favoured by the UK government in policy documents. The success of the Government’s policy is dependant on the cooperation of academics and if, as it has been demonstrated in some cases, staff have a limited grasp of this policy area, then this must inevitably limit the potential for the adoption and implementation of *third stream* policy by higher education institutions. In this study, the terms “competition” and “wealth creation” are completely ignored by a vast majority of the academics interviewed. The fieldwork has also revealed that a major issue at all three host institutions is a perceived lack of incentives for academic staff to become involved in *third stream* activities. This compounds the problem of a lack of dissemination in that, for the (possibly) minority of academics who have a good grasp of what *third stream* policy and activities are, a majority of this group are unlikely to want any involvement in this area of work as they cannot see the benefits to them. The issue of incentives, like the dissemination issue, has been cross-checked, compared and triangulated between *third stream* managers, academics and Government (via HEFCE documentation).

It has been particularly important for the researcher to maintain objectivity in the conduct of this study due to his experience in several university posts where he had responsibility for *third stream* activities. The results of the empirical research in this study that have emerged is very much in line with the researcher’s previous experience; particularly in relation to the (often) reluctance of academic staff to prioritise *third stream* projects. Reflecting on the research themes; there is evidence from the fieldwork that *third stream* is becoming increasingly established in

the two host universities in this study, although not in any meaningful way at the host College. Changes in management style are occurring, however, all three host institutions are some distance from being accurately described as an entrepreneurial university or college. The issue of complexity of policy, which is clearly identified in chapter one of this thesis as an important policy issue, is also apparent from the fieldwork given the diverse range of responses from the interviewees. The research findings signal the complexity of the policy process and this is demonstrated by the different ways in which the interviewees respond and the review of literature (Weiss, 1982; Levin, 2001; Ball, 1990). The propositions offered in section 5.2.1 above; that is, regarding dissemination of policy to academics, incentives, and the need to provide space in the workload of academics for engaging in *third stream*, should all be considered in the context of a global policy milieu; the need for these proposals are evidence, it is suggested, of the complexity of the policy process and of how the boundaries between higher education and business have reconfigured.

The next chapter, Conclusion, is the final chapter of the thesis.

Chapter 6

Conclusion

6.0 The attraction of the *third stream* area of education policy as a field of study for this doctoral research stems from the researcher's experience, over several years, of working at a senior level in universities and having responsibility for the development of this area of provision. This interest in *third stream* motivated the researcher to undertake a review of the literature and to explore Government publications that are relevant to *third stream* policy. This investigation revealed that the amount of *third stream* funding available to higher education institutions averages out annually at circa £1m per institution; with the total funding commitment to *third stream* activities over the period 2000/01 to 2010/11 set at £1bn (at 2003 prices) (HEFCE, 2009). Recognising the importance of education policy, and having an instinctive feel for the significance of the relatively new *third stream* agenda in higher education, the researcher found the challenge of focusing on this very specific area of Government education policy compelling. The purpose of this research was to explore the complexity of government policy-making and to determine the extent of the adoption and implementation of a particular component of core higher education funded activities, the *third stream*, at three higher education providers in a specific region of England. The study has achieved this aim and this thesis has provided the reader with an understanding of the complexity of policy-making, the specific nature of *third stream* activities, and the degree that academics and *third stream* managers have embraced *third stream* at the three host institutions.

Clarity of the UK Government's own views on the success of *third stream* policy has also been achieved and has been shown to be largely positive.

From the outset of this doctoral research the literature has shown that there is a strong case to support the view that education policy frequently fails to emerge as intended and that the process of policy-making is both complex and dynamic (Walford, 2003; Ball, 1994; National Audit Office, 2001). The popular perception that the policy-making process is 'linear in form', it is suggested, is misguided (Walford, 2003). An example that is given by several commentators on the influences that policy-makers face is the power of globalisation and there is a view that this influence has affected the content and form of the policy-making process (Dale, 2007; King, 2004). The impact of globalisation, it is suggested, is that to varying degrees sovereign states have a diminished capacity to decide upon national policy (Delanty, 1998). Even the most important policy decisions, it has been stated, are the result of processes that are mixed-up and diffuse (Ball, 1990); commentators (Levin, 2001) report that government policies demonstrate uncertainty, a lack of clarity, and are frequently unclear and ambiguous. There is a view that policy-making is frequently influenced by the desire of politicians to get re-elected (Fink, 2001).

The review of literature revealed that there is a concern in the academic community that Government funding for research is increasingly linked to the potential for commercialisation of the research results and that HEIs will progressively have to be responsive to the needs of industry

and the economy (McDaniel, 1996; Etzkowitz *et al*, 2000). Some observers (Renault, 2006; Stephan, 2001), however, support this move in direction at universities and suggest that a greater external focus can result in benefits such as better resources and that it encourages a more dynamic atmosphere. The prospect of universities becoming more ‘entrepreneurial’ has both advocates (Clark, 1998b; Soares and Amaral, 1999) and critics (IOE/AUT, 2000); the latter bemoaning the demise of the traditional collegiate model and academic autonomy; the former welcoming the new managerialism culture. It was apparent from the literature review that there is a resistance by many academics to prioritise *third stream* activities over the traditional academic role of research and teaching (IOE/AUT, 2000). Most academics, Kirby (2006:599) suggests, ‘see their role as teachers and researchers and not as entrepreneurs’. In the fieldwork of this study, like Kirby’s (2006) experience, there was no overwhelming feeling that the academics who were interviewed could, in anyway, be coerced into participating in *third stream* activities.

It was felt important by the researcher that he identify the Government’s perception of HEIs *third stream* performance before gathering primary data. The overall impression from the analysis of HEFCE documentation, and other Government publications, is that there is a positive perception of HEIs in their *third stream* activities (HEFCE, 2007c). A criticism of HEFCE’s performance indicators is that they are not SMART targets (specific, measurable, achievable, reliable and time-bound) (SPRU, 2002). Also, it is questioned as to whether the Government is fully committed to the exploitation of the intellectual property of universities in order to maximise wealth creation; the community aspects of *third*

stream are frequently referred to and this can result in the accusation that the aims of policy in respect of the commercialisation of university research is too modest. This position, if it is an accurate reflection of the Government's *third stream* aims, is contrary to the 'text' and 'discourse' found in the Government publications that have been analysed in this study (Ball, 1994; Banister *et al*, 1994). The dominant theme that the discourse analysis in this study has identified, that runs through the policy documents, is economic in nature and uses a vocabulary of terms such as 'competition', 'global economy', 'productivity' and 'wealth creation'.

The challenge then was to discover from the empirical research the level of adoption and implementation of *third stream* activities at the three host institutions. A significant issue of this research being whether or not academic staff have been 'captured' by this particular aspect of Government education policy (Trowler, 2001). Due to the complexity of the subject a qualitative research approach was taken and this has provided a rich source of data (Ball, 1994). The picture that emerged by taking a qualitative approach, drawing upon ethnographic methods (McNeill and Chapman, 2005) and grounded theory data analysis (Ormerod, 1996; Moustakas, 1994), is one where some academics demonstrated little or no understanding of the full extent of *third stream* policy; and those who did exhibit an understanding were generally dismissive of the willingness and ability of their colleagues to engage in what is a core HEFCE funded activity. A frequent observation by *third stream* managers and academic staff experienced in *third stream* is that the majority of academics are either unaware of *third stream* activities or not interested/lack the necessary qualities to work with business

orientated organisations. Those who do have the requisite skills are seen to be small in number; perhaps, it was suggested, around ten percent of academic staff. It was also suggested that some academic staff engage in unofficial “black-market” activities where they retain the profits from external work entirely for themselves and may be in violation of their contract of employment; however, activities of this kind are consistent with the view of Warner and Leonard (1997) who assert that cash incentives are favoured by university staff (1997:40).

The common issues that emerged *in situ* from the interviews held at the three institutions were that, (1), the dissemination process was not effective in informing all staff about the full range of *third stream* activities that are associated with this core area of higher education policy and that, (2), it was felt that there is a lack of incentives; money or career progression opportunities, for those individuals who are engaged in *third stream* activities. Although, as stated above, support for financial incentives can be found in the literature (*ibid*), there is also the suggestion that career management for those academics involved in *third stream* developments ‘will be an increasingly important issue’ (Wilson, 2000). At Rockbridge University, the institution has a good policy that sets out rewards for all staff who are involved in the exploitation of intellectual property. However, in the interviews it was apparent that the University’s own policy had not been fully circulated and that some individuals who are inclined to participate in *third stream* activities had either not heard of the policy or had heard of the policy but had not seen a copy. A further significant issue, (3), is that academics who have the ability and inclination to become involved in *third stream* projects may

be restricted if the Head of School or Dean of Faculty does not support the institution's *third stream* agenda. Deans and Heads are gatekeepers who, to a great extent, control a large amount of the flow of government policy information and documentation; they are also critical to the process of work prioritisation and the distribution of tasks. The importance of having a good manager who can raise the profile of an academic by providing opportunities is stated by McCaffery (2004:254) who believes that the line manager should understand the academic's role and be supportive; keeping individuals informed on a continuing basis (ibid:255).

Of course, as can be observed in chapter 5 of this thesis, there are a number of other issues that have been raised by the interviewees at the three host institutions. The significance of the above propositions is that without achieving the 'capture' of appropriately qualified and willing academic staff, there are bound to be limitations on the ability of HEIs and Government to expand the *third stream* agenda. There are a number of other issues, raised by interviewees, which would be worthy of further exploration such as: continuity of *third stream* funding, resource levels, changes in management style, perceptions of Government 'spin', the benefits of *third stream* training, the role of university business development managers and, finally, the apparently weak performance/unattractiveness of spin-off company developments. Spin-off companies are frequently mentioned in the literature as examples of *third stream* activities. The negativity towards spin-outs emanating from the interviews in this study are consistent with the views of the Lambert Review (2003b) and Wright (2004b), discussed in chapter 3 of this thesis,

in that there is seen to be a need for improvement in the success rate of spin-off companies. What is interesting are the issues that have not been raised by interviewees. It was surprising to the researcher that the impact of *third stream* on the student experience was not raised as an issue. In the literature, commentators suggest that academic staff are being diverted from students and curriculum towards technology transfer and that this can affect the relationship between academics and students (Stephan, 2001; Osman, 2000). Other themes that emerged from the literature review, and that has been touched upon by some interviewees, are discussed below.

In the literature review the question was asked as to whether the UK *third stream* experience mirrors the benefits of the USA policy. In the United States, the higher education institutions that are showcased are often elite universities such as MIT (Etzkowitz *et al*, 2000). None of the three host institutions that have been the subject of this study have anything like the resource level that MIT enjoys. The differences between the pre-92 and post-92 universities and the College in this study are significant. Rockbridge University, although substantially lower than the likes of MIT in the world rankings, is actively involved in both basic research and knowledge/technology transfer. Although Stapletower University engages in some basic research, the University's strengths lie in knowledge and technology transfer. Maintown College has a substantially smaller level of resource than the other two host institutions have. Even if *third stream* was to become *second stream* in the College's strategic plan, it is likely that, for the foreseeable future, income generation activities such as short courses will prevail. The three institutions, although worthy,

are in different divisions; with Rockbridge University occupying the ground of the traditional universities and, at the other end of the spectrum, there is Maintown College struggling to get a foot on the university ladder. This position goes some way to explain the differences between academics at the three host institutions. There are significantly differing conceptions of the policy and its effects between academics at the three organisations in this study. The three host institutions have all started from different positions and it is unrealistic for new universities to be compared, in terms of the full range of *third stream* activities, to either the pre-92 HEIs in the UK or to the best global practice at premier USA universities (Etzkowitz *et al*, 2000).

In the literature review a perceived benefit of an HEI being more entrepreneurial focused was said to be that they have a better chance to control their own destinies (Clark, 1998b). Of the three host institutions in this study only Rockbridge University appeared to have the foundation necessary to enable the University to control its destiny. Even so, Rockbridge University itself does not profess to be entrepreneurial. Stapletower University appears to have some entrepreneurial staff, however, the University is a young institution and any measurable degree of improvement in self determination, in the view of the researcher, is some years away. Maintown is most certainly tied to the funding councils' teaching and learning priorities and is almost totally reliant on this funding stream. Perhaps, partly, in attempts to control their own destiny, the management of HEIs has become more businesslike. Judging from this study the role and professional identity of academics does not appear to have been profoundly affected by managerialism (Reed and

Deem, 2002). Perhaps managerialism is beginning to replace collegiate and hierarchical governance; however, certainly at the traditional university in this study, several areas still enjoy a 'blue sky' research environment. What is a definite development is that, in various forms of involvement, each of the three host institutions has specialist commercial units/centres that facilitate or conduct *third stream* activities. It is not difficult to envisage that a new 'elite' of *third stream* focused academics will evolve in a similar way that Research Assessment Excellence researchers have been subject to professional comparison.

The information obtained by primary research equates with the experience of the researcher of this study when working at a large post-92 city university in the North of England at the time of incorporation. During that period income generation activities, now considered to be part of *third stream*, received increased prominence at this new university. It was clear to management that the majority of income generation, such as consultancy, was being undertaken by academics on a personal basis. Management's approach to this dilemma was to impose a new 'exclusive' contract of employment for academic staff. This act merely encouraged a large proportion of academic staff at the University to conceal their private work which, at least in the short to medium-term, contracted the number of business contacts. 'Business development' managers at the University had the unenviable task of 'motivating' academics to use *their own contacts* to bring work into the organisation. Those academics who obliged often found themselves conducting consultancy for significantly less rewards than when they operated independently of the University. Events such as this were not restricted to

this particular HEI and this scenario was common practice in most post-92 universities in the mid-1990s. The evidence from this study is that improvements have most certainly been achieved in the adoption and implementation of *third stream* activities at higher education institutions over the last decade. However, it is clear from the evidence in this study that the true potential of *third stream* policy has not been achieved and that significant expansion of *third stream* could be gained at the three host institutions by addressing the issues that have been highlighted; dissemination, incentives and the enabling of academic staff. The impact of this action, the evidence suggests, could benefit the institution, industry and the community. Whether the individual academic will benefit depends very much on the system of incentives at the HEI and the academic's personal motivation and professional interests.

It has been shown that there is little evidence from the interviews in this study that any of the three host institutions have fully embraced either academic capitalism (Slaughter and Leslie, 1997) or the concept of the entrepreneurial university (Clark, 1998a and 1998b). Technology transfer however, as reported, is expanding at the two universities, if not at the participating college. It is not possible to detect any significant changes to the culture at the three host institutions. As noted earlier in this chapter (page 260), the discourse analysis method that has been applied to UK Government policy documents has identified an economic theme to the policy documents and terms such as “wealth creation”, “globalisation” and “competitiveness” which are common. These terms, however, have not been of significant interest to the interviewees involved in the fieldwork element of this study. The sophistication and

clarity of *third stream* policy in the USA remains ahead of the position in the UK (Duggan, 1996). Another highly significant issue identified in this study is that the complexity and ambiguity of policy and policy-making, well documented in the literature review in chapter 1, and evidenced in the discourse analysis of Government policy documents, is also apparent from the fieldwork undertaken in this doctoral research and is evidenced by the by the diverse range of responses by the interviewees.

Throughout this thesis there are a number of findings for the three host higher education institutions to consider in order to ensure greater *third stream* success. Some of these findings, apparently, are also of interest to policy-makers. Although the main propositions arrived at in chapter 5, and identified above, are related to the dissemination of *third stream* policy to academics; incentives for staff; and the influence of Heads of School and Deans of Faculty in policy implementation, it is worth reminding the reader of other significant findings that this study has discovered. These include the increasing overlap between business and academia, the desire for a 'level playing field' in *third stream* funding, and recognition of the consequence of the imbalance between the funding of *third stream* activities with that of the traditional core areas of teaching and research.

Finally, the researcher has found that undertaking this study has been personally very rewarding and the results have been both confirmatory and, on other occasions, illuminating. With the total committed *third stream* funding that has been reported of £1 billion in the period 2000/01 to 2010/11, research into *third stream* policy and activities such as this study are, in the view of the researcher, worthy of further consideration

by policy-makers. Although it is natural for a researcher who is exploring an area of government policy to aspire to influence future Government policy, it is reasonable to assume that this is an experience that eludes most doctoral researchers, particularly if the methodology does not enable generalisation such as that in a qualitative study. It was then, a particular satisfaction for this researcher when he was invited to the House of Commons to discuss ideas that have been generated from this study with a Government Minister. As a consequence of this meeting, the researcher is advising the Minister on a new model university.

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APPENDICES

APPENDIX A

HEFCE -Third Stream Scope



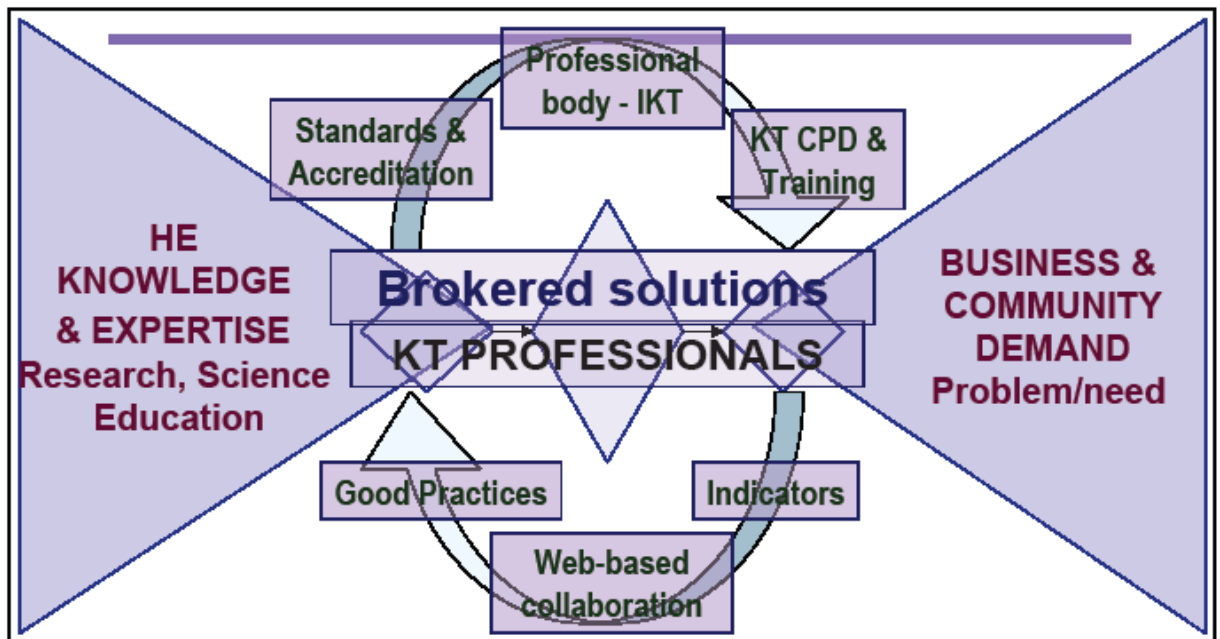
NB This represents scope not scale

hefce

Source: HEFCE (2006b) – Vinnova and British Embassy Seminar

APPENDIX B

Optimised HE Knowledge Transfer and Exchange



SW BCE for JISC Conference 2007

JISC

Source: HEFCE (2007g) Presentation at JISC Conference

APPENDIX C

The Lambert Review Terms of Reference

The full terms of reference for the Review are as follows:

- Identify the benefits to business of greater interaction with higher education, how this can be promoted and how any barriers holding back business demand for universities' knowledge and skills output can be addressed.
- Examine the national, regional and local economic impacts of business-university interactions, including how Regional Development Agencies and Sector Skills Councils can best support such interactions.
- Assess the lessons to be learned from business-university interactions across a range of countries and from best practice across the UK.
- Analyse how business employers can better communicate their skills requirements to a responsive university sector and how they can improve the attractiveness of career paths to graduates and postgraduates, especially in technology.
- Examine the effectiveness of measures such as the research and development tax credits on business demand for research and skills.
- Ask business for its views on the present governance, management and leadership arrangements of higher education institutions and their effectiveness in supporting good research and knowledge transfer and providing relevant skills for the economy.

Source: The Lambert Review of Business-University Collaboration (2003:117)

APPENDIX D

The SPRU's List of Suggested *Third Stream* Indicators

<u>Indicator</u>	<u>Strengths</u>	<u>Weaknesses</u>
Number of patent applications	Reflects potential commercial value of innovations.	No indication of the social & economic value. May promote over filing of patents.
Number of patents awarded	As above. Number granted is a "quality indicator".	Social & economic (as above). No indication of market size/prospect.
Number of licences granted (incl. option agreements).	Reflects demand for university innovations.	Does not discriminate income levels of licences.
Royalty income (including value of option fees).	As above. Shows commercial success (quality measure).	Distribution of income is very skewed; dependent on the market.
Median value of royalties (including option fees).	As above. Controls against any bias of an extreme value.	n/a
Number of spin-offs created in the last 5 years.	Indicator of HEIs' efforts to exploit commercial capability.	Does not measure their size or economic & social relevance.
Number of current employees in spin-offs created in the last 5 years.	As above. Also, it provides an indicator for the magnitude of this set of activities.	Growth of spin-offs may be due to market conditions or other factors unrelated to university activities.
Turnover/profits from spin-offs (SOs) and commercial arms (CAs).	Measures the direct economic impact of spin-offs. Indicates the level of contract research via commercial arms of HEIs.	Many new science-based spin-offs can take a long time to generate income. T/O & profit from SOs and CA is difficult to separate.
Development funds and loan facilities by universities to support start-ups.	Important HEI entrepreneurial activity. Data of this kind may already be available in HEIs.	Input indicator. Could encourage higher expenditure without concern for outputs.
Number of invitations to speak at non-academic conferences.	Identifies positive demand and social value of university knowledge capabilities.	Indicator does not reflect the magnitude and importance of the events.

Number of invitations to attend advisory committees of non-academic orgs.	As above.	As Above.
Income derived from leasing/letting/hiring S&T university facilities (labs and testing).	Reflects demand for and social value of university facilities.	Too strong an incentive to let research facilities may affect the use by academics& students.
Total number of free use days spent by externals (non-academic) using labs etc.	Identifies demand and social value of HEI facilities. Shows the likely bias of income only.	Data collection can be problematic.
Income derived from leasing/letting/hiring cultural and leisure facilities (eg, theatres)	Reflects demand and social value of HEI facilities and an incentive for community use.	Biased towards paid use of facilities (although evidence is that this use is not always charged).
Total number of events run and organised by the HEI for public benefit.	Reflects HEI activities that contribute to local community welfare.	The success and magnitude of each of these activities are not being considered.
Income derived from leasing etc of office and library space to industry and social groups.	Reflects demands and social value of university facilities.	Biased towards paid use of facilities. There is evidence that use is not always charged.
Total number of free use days spent by externals (non-academic) using office & lib.	Identifies demand and social value of HEI facilities. Shows bias of income only indicators.	n/a
Value of contract research carried out by the university.	Identifies the level of non-academic demand for research services from the university.	Value affected by complex market conditions and its distribution is likely to be skewed by big deals.
No of contract research deals (exc. follow-on) agreed by HEIs with non-academic orgs	Compensates for skew of few big value activities and improves diversity of services.	Does not indicate the social value of the activities measured. Could encourage splitting of large deals.
Number of refereed publications authored with non-academics.	Identifies substantial collaboration with non-academics in academic work.	Indicator says little about the quality, magnitude, and social value of the activity.
Number of non-academic orgs collaborating in EU/ Research Councils' projects.	Reflects the degree to which non-academics are involved in academic research projects.	"Collaboration" needs defining. Number of partners alone does not explain extent of collaboration.
Value of contributions (both in cash & in-kind) by non-academic collaborators above	Provides an indicator of the volume of non-academic contribution.	Different techniques can be used to assess the value of in-kind contributions.
Number of faculty members	Reflects a high degree of	n/a

taking a temporary position in non-academic orgs.	engagement and collaboration between HEIs & outside orgs.	
No of employees from non-academic orgs taking temp T &/or R positions in HEIs	As above.	n/a
No of students in sandwich courses and attending HEI organised internships.	Measures a direct way of aligning teaching activities with societal needs.	n/a
No of credit earning courses following a direct request from non-academic orgs.	Identifies actions to align teaching capabilities to new social needs.	Requests need to be traced and logged and this indicator may be laborious to collect.
Number and % of recent graduates not looking for work 18mths after graduation	An indirect indicator of the alignment of their training with societal needs/demands.	Working too close to industrial needs may lead to short-termism in the definition of teaching curricula.
Rates of satisfaction with the knowledge & sets of skills acquired through the course.	Indicators of course meeting the needs & expectations of students and future employees.	Data collection will require substantial resources.
Number of postgraduate students sponsored by industry.	An indicator of the degree to which specialised P/G courses address the needs of industry.	Bias in favour of applied disciplines addressing industry-related issues (management; eng.)
Income from non-credit bearing teaching and associated activities.	Community learning outside credit bearing courses are a key third stream activity.	May be bias in favour of private sector at the expense of lower income community courses.
Number of different institutions that have attended or have taught in non-credit bearing teaching and associated activities.	An indicator of extent of focus upon activities targeted to professional audiences. It is not biased against poorly resourced communities.	May be difficult to collect. Is difficult to define with clarity what constitutes a different institution.
Number of appearances by university academics in regional, national or international TV or radio.	Can be used as a proxy indicator of dissemination outside of academia. Audio-visual media is far reaching.	There may be difficulties in collecting data.
Number of times university or its faculty members are mentioned in broadsheets because of their research and teaching activities.	Can be used as a proxy indicator for the non-academic impact of university teaching and research activities.	The indicator does not discriminate between “positive” and “negative” mentions.

<p>Number of times that academics have attended professional, non-academic conferences (where the majority of participants were not academics).</p>	<p>This is a proxy indicator of the extent to which academics are involved in professional activities targeted at non-academics and where networking can take place.</p>	<p>No indication of the relevance of the conference or the type of participation of the academic.</p>
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Source: Amended from Science and Technology Policy Research (SPRU), University of Sussex, (2002:67)

APPENDIX E

Specimen Interview Transcript - Stapletower University Manager

The meeting started with the researcher thanking the manager for the allocation of time made available for the interview and the assistance provided in identifying other potential interviewees. Casual conversation revealed that the University had increased the volume of *third stream* activities since the arrival of the current vice-chancellor although the main element of *third stream* provision at the university is of an applied nature. It was explained to the interviewee that all interviewees would be told that their interview is part of a study that the researcher is undertaking for his doctorate in the area of *third stream* higher education policy. It was also stated that *third stream* has its origins in income generation and is a core HEFCE funded theme following teaching and research. It was then explained that the researcher does not have all the questions, and that the researcher encourages the interviewees to raise any issues that they see as relevant to the interview topic. A major concern of the researcher was not to impose any prior assumptions on the interviewee. It was explained to the interviewee that there are no right or wrong answers. An assurance was given that no interviewee would be named in the study and that all interviewee contributions will remain unattributed. The interview progressed with the researcher enquiring as to the interviewees' understanding of *third stream* policy:

What do you believe *third stream* policy to be? (Researcher)

[There is] more to be had out of academic institutions above teaching and research. Given the spend [on higher education] there should be a return... [on the] application, implementation and commercialisation of what has been created in the Institute... enhance the turnover of the HEI without digging in the coffers. (Manager)

Can you give me examples? (Researcher)

My original thought was intellectual property (IP)... to grab and exploit... we need to incentivise [academic staff], but in fact [at Stapletower University] there is not a lot of IP and it is far from the market. If not IP, then [we] encourage KTP (knowledge transfer partnerships) type activities and consultancy as well as direct provision such as bespoke training... at full cost. There is not a fat lot of IP [exploitation] anywhere; particularly post-92s [new universities].
(Manager)

To what extent are Stapletower academics willing to engage in *third stream* activities? (Researcher)

There is a small minority who embrace [third stream] but for the majority there must be incentives or it will have to be part of the job... just another thing to do. Third stream is not seen as career progressing and not well incentivised. A significant number [of academics] see

third stream as not pure... a little dirty; 10% are willing but only a proportion [of these] are able. (Manager)

Has *third stream* policy had any impact on management style at the University? (Researcher)

A cajoling, influencing and persuading approach as opposed to a more autocratic style. There is the issue of expectations of academics; the workload of teaching and research doesn't apply to third stream. There is not an expectation of doing third stream so you are starting from a position of disadvantage. (Manager)

In two previous interviews one interviewee said employers may see *third stream* as cheap research and another saw employers as having a vested interest. What is your experience? (Researcher)

Employers are only interested if there is a direct benefit for them; cause and effect. They don't want to buy high level activities; HEIs value scholarly activity but employers value the output; they want shit loads of money. A paradigm shift is needed if [an HEI is] to grasp third stream; that's why third stream ends up in a separate department managed by different sorts of people. Different to academic schools. Lots of third stream people have not come via the academic route. (Manager)

What has Stapletover University developed in terms of the *third stream* agenda? (Researcher)

HEIF (higher education innovation fund)... bandwagons are jumped on such as business development centres and liaison type units that are separate [operate independently from academic schools]. Incubators encourage “spin-in” rather than “spin-out”. (Manager)

How familiar are you with Government *third stream* policy documents?
(Researcher)

White Papers; Dearing Report; Tomlinson; competitiveness and initiatives such as HEIF and graduate entrepreneurship... the initiatives have no major substance. Short-term [HEFCE] hits are gained from responding to initiatives but are not long-term... it is a short-termism game. (Manager)

How well do you believe Government thinks it is doing with its *third stream* policy? (Researcher)

I think that they think that they are doing well. Additional level of funding [is necessary] with successful outcomes. There is an enhanced level of creative activity by HEIs... universities and industry working together affects UK Plc output. (Manager)

Do you believe that HEIs are receiving increased *third stream* funding?
(Researcher)

Yes, but not as much as should be; the percentage increase is good but based on a low start. HEIF is £500m over three years but compared to research and teaching is not a lot. (Manager)

Should *third stream* funding be competitive then? (Researcher)

Yes it should but the process is flawed... really funding how people have jumped on the bandwagon. I think that with a 5-10 year strategy there should be some recurrent funding but would HEIs become complacent? The issue is how to achieve a balance... the way forward is base load funding plus special funding. (Manager)

Are there any specific *third stream* issues at Stapletower University?
(Researcher)

The University is bereft of easily identifiable and exploitable activity. It is a good teaching institution with some pockets of good reputation; the [name withheld] Centre is well thought of. A [name withheld] Institute is being developed as well... what else could be tapped into? TCSs (teaching company schemes; now called knowledge transfer partnerships) were a useful vehicle to exploit... to exploit graduates into third stream activity [as associates]. It was a brokering activity; not organic growth from within. When big numbers came for TCSs we got

the cash but very quickly the ability of the university was exhausted [of appropriately qualified academics in the required disciplines] so we had to buy in... like sub-contract labour. (Manager)

Is there anything else you would like to add? Are there any issues for the future? (Researcher)

This is an increasingly important activity and there is a blurring of the edges [with research]... at what point do they [third stream activities] become third stream. Third stream will become increasingly important to survival [of HEIs]. In the future there won't be a distinction between 1st and 3rd [HEFCE funding streams]; we will [all] be serving a customer... increasingly matching product to customer needs and the customer pays. (Manager)

The interview concluded with the researcher thanking the interviewee the once again for contributing to this study and the interest shown in this research. The interviewee gave a commitment to comment, at a later stage, on the research results. The discussion then moved to an informal talk about undertaking doctoral research and non-*third stream* developments at the University.

APPENDIX F

Specimen Interview Transcript – Maintown College Academic

The meeting started with the researcher expressing his gratitude to the interviewee for participating in the study. The interviewee appeared a little nervous at first and the researcher entered into a casual conversation by asking the interviewee about how things are in the interviewees' academic area. The interviewee appeared comfortable with this conversation; talking in general about new curriculum developments, student recruitment and a management issue. The researcher moved the conversation on by explaining that this interview is part of a study that the researcher is undertaking for his doctorate in the area of *third stream* higher education policy. *Third stream*, it was explained, has its origins in income generation and is a core HEFCE funded theme following teaching and research. The interviewee was encouraged to raise any issues seen as relevant to this discussion of *third stream*. It was explained that this is desirable as the researcher does not have all the questions. It was explained to the interviewee that there are no right or wrong answers. An assurance was given that the interviewee would not be named in the study and that all interviewee contributions will remain unattributed. The interview progressed with the researcher enquiring as to the interviewees' understanding of *third stream* policy:

What do you believe *third stream* policy to be? (Researcher)

I think that this is working with local partnerships like the Local Education Authority (LEA) who have close liaison with the College. The main agenda is an emphasis on training which has some Government funding. The funding is important and comes via the local partnership. This varies in different LEAs... [the partnership] wants to up qualifications for managers and NVQs have been replaced by FDs (foundation degrees). (Academic)

Do you have any other examples of *third stream*? (Researcher)

Level 4 training for pre-Cert Ed and 12 week [course] for people in business; this is more training than teaching (Academic)

Are staff willing to get involved in *third stream* activities? (Researcher)

With the pre-Cert Ed course the tutor recognised a gap and put the programme together... it is a similar position in other courses... INSET is example. There is flexibility. (Academic)

Has this type of activity resulted in any change in management style at the College? (Researcher)

It's ad hoc; we rely on individual experience and expertise... staff are well informed and have a professional approach and commitment. There is not an overall strategy. [an example is] foundation degrees which are not seen as directly bringing income in [however] the

professional side drives but finance is becoming an issue [driver].
(Academic)

Do employers value this area of work in your school? (Researcher)

Employers have a vested interest in these courses; including the LEA.
(Academic)

How familiar are you will Government policy initiatives (Researcher)

I'm very familiar; [secondary] schools, LEAs and new Ofsted documents. (Academic)

Any other aspects of policy in, say, a business related area? (Researcher)

Management [module] including entrepreneurial studies. (Academic)

How well does the Government think that it is doing with *third stream* policy? (Researcher)

The Government thinks that it is meeting targets. People are coming in as lecturers [to the College] with skills but don't necessarily have an educational background. (Academic)

Are there any particular *third stream* issues at the College? (Researcher)

Foundation degrees not getting the same money as, say, [name with held] College (a college in the next borough). This is a national initiative but the local council/partnership not funding the [Maintown] College... not always a level playing field. (Academic)

Is there anything else that you want to add? Any future issues?
(Researcher)

No; most [courses] are mainstream... Government is setting objectives but not backing with funding. Our future agenda is higher education and we can do it [achieve university status]... there is a commitment by staff and [they] have own clear goals for students. (Academic)

As the interview concluded the interviewee was apologetic for not being better informed about *third stream* policy. The interviewee had demonstrated a quite narrow view of what *third stream* is, and this was in common with the responses made by other Maintown College interviewees. An example of the confusion of what *third stream* activities are is the reference to *foundation degrees* which are more usually associated with mainstream provision. The interviewee was assured that this interview had been extremely useful to the research and the interviewee was thanked for making time available for the researcher.

APPENDIX G

Specimen Interview Transcript – Rockbridge University Academic

As with other interviewees, the researcher started the meeting by thanking the interviewee for making time available in the interviewees' schedule. The interviewee appeared quite relaxed about the occasion and the attempt by the researcher at instigating a more general conversation rapidly progressed to *third stream* related matters. The researcher was mindful to explain to the interviewee that this interview is part of a study that I am undertaking for my doctorate in the area of *third stream* higher education policy. For consistency, the interviewee was informed that *third stream* has its origin in income generation and is a core HEFCE funded theme following teaching and research. It was further explained that the researcher does not hold all of the questions, and that the interviewee is encouraged to raise any issues that the interviewee deems relevant to the interview topic. As with all interviewees, it was explained that there are no right or wrong answers. An assurance was given to the interviewee that no interviewee would be named in the study and that all interviewee contributions will remain unattributed. The interviewee, as an experienced *third stream* participant, had revealed in the preamble a degree of understanding of *third stream*. Accordingly, the focus promptly expanded to *third stream* activities at the University:

What examples do you have of *third stream* activity at the University?
(Researcher)

The University is engaged in a range of third stream activities across several faculties; in some areas they have established specialist centres or institutes. In my area we have created a centre that uses digital media to provide a range of provision by having access to excellent technology facilities. One national project has been very successful and has been extended for a further three years. The University has also invested in dedicated enterprise and business support centres... this has had a positive influence on this work. Partnerships are important; including both the public and private sector organisations. (Academic)

The range of knowledge and technology transfer activities at the University appears to be substantial; how willing are academics to engage in these third stream initiatives? (Researcher)

This varies depending on the individual and the department; some colleagues are supportive of third stream. Some staffs (and externals) don't know where the science park is or that it is University [owned]; there are some silos. We also have partners in other parts of the country... we wanted to build [this Centre] on partnerships. What is needed is a career progression route [for academics working in third stream areas... I have reached a plateau myself. If this problem is not dealt with it will impede future third stream development at Rockbridge. Why should colleagues be tempted to prioritise commercial facing

activities if it means forfeiting promotion opportunities?... it is costing me in my career. Greater investment is required if further growth is to happen. (Academic)

Has *third stream* work had an influence on management style at the University? (Researcher)

There has been some change in management style although this varies across the University. Having a commercial office manager is more structured; more accountable. Colleagues are often not prepared [for working with the private sector]. There has been a lot of “suck and see” and no management training. There is a definite need for more formal management training. (Academic)

Do employers value *third stream* activities? (Researcher)

The Local Education Authority (LEA) now sees the University as a credible training partner. The LEA did [previously] see the University as competition. We need to do more to do more [external promotion] to alert external organisations to the facilities that we have and the research and other work that we are doing. We have a number of successes that we should promote more strongly. A number of employers would be surprised at the work that we do at the University. (Academic)

Are there any other points, in relation to *third stream* at the University, which you would like to add? (Researcher)

My own Faculty needs a greater awareness [of the third stream related Centre] and I would like to see a greater presence across the Faculty. There should be integration between teaching and learning with third stream; involve commercial organisations in the IT field... form a partnership. Working in partnership with commercial organisations increases the funding available for both development and evaluation. In our area of work [name of external organisation withheld] has the monopoly and partnerships are the best way for us to challenge this position. (Academic)

This interview has demonstrated that Rockbridge is embracing the *third stream* agenda; however, the interviewee has identified the importance of internal communications and training as well as external focused promotion. The interview concluded with the researcher thanking the interviewee for the insight provided as to the level of implementation of *third stream* policy at Rockbridge University.