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Funding in Higher Education and Economic Growth in France and the United Kingdom, 1921-2003*

by
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The UK 2004 Higher Education Act generated important debates about the relationships between higher education (HE), economic growth and social progress. The range of positions expressed in relation to the increase of annual tuition fees raises crucial questions about the public and private funding of higher education and its individual and social economic benefits. Such controversies have a strong resonance in France where discussion about HE underfunding has already emerged. This article seeks to inform these current debates by combining economic and historical perspectives within a quantitative approach. The analysis of new historical series on funding and development of UK universities since the 1920s and the comparison with similar data for France has put into evidence a long-term link between HE funding and economic fluctuations. In both countries, the expansion in university resources was not linear and may be related to the impact of long economic cycles on public funding. Moreover, in the UK case, private funding periodically increased in order to replace diminishing public funding, rather than taking the form of additional resources. In consequence, private funds did not provide an overall rise in the universities' income. The considerable fluctuations of funding, combined with a more consistent growth of enrolment, led to a recurrent mismatch between resources for and access to higher education. This can explain the wide fluctuations of resources per student over the period and the current underfunding situation. Such historical trends question whether, in the future, increased fees will be a substitute for public spending. Or will variable fees be combined with even greater increases in public funding as part of a national project to support HE students from all social backgrounds and to boost expenditure per student?

* This article is a substantially developed version of a paper published as "Cycles longs et financement universitaire : une perspective historique sur les réformes actuelles au Royaume-Uni", *Économies et Sociétés*, Cahier de l'ISMEA, Hors Série, n° 40 (2005), pp. 1607-1634.

Introduction

The close Parliamentary vote on the UK 2004 Higher Education Act confirmed the contentiousness of the issues addressed in the White Paper on the Future of Higher Education (DfES, 2003). The main controversy focuses on the implications of the introduction of variable annual student tuition fees of up to GBP 3 000 in England. Following the Dearing Report's recommendations (1997), the government considered higher fees as necessary additional resources to resolve underfunding in a context of competition from international universities. Access to higher education will not be compromised, the government argues, because upfront fees are to be abolished and financial support is to be offered to students from poor backgrounds (Barr, 2003a). But opponents have drawn attention to the deterrent effect of the rising levels of debt for students upon graduation (Callender, 2003) and a potential increase of inequality between higher education institutions (Ainley, 2005; Brown, 2005). Similar concerns were directed towards the Conservatives' counter proposition to replace fees with higher interest rates for students' loans (Carpentier, 2004a).

Although there is a consensus on the need to reform higher education, different views are expressed about the extent and the nature of changes to be implemented. Most controversies focus on alternative ways of financing higher education and on the orientation its development and democratisation should take. Key issues concern the relative contributions of private and public finance, the possible effects in terms of attendance and equity and the benefits for the society as a whole. The range of positions expressed in relation to top up fees raises crucial questions about the public and private funding of higher education and its individual and social economic benefits (Barr, 2003a; Dearden *et al*., 2005).

Such issues are not specific to the UK but have become a worldwide concern (OECD, 2004). For example, the UK debate has a strong resonance in France where discussion about HE underfunding has already emerged. Demichel acknowledged that free of charge higher education "is taken for granted in France" and is part of a culture that will be difficult to change (2000, p. 14). However, a recent study on education and economic growth has shown that some universities have already introduced extra fees for specific services related to sport, photocopying and registration (Aghion and Cohen, 2004, p. 75). A recent parliamentary report stated that the question of fees cannot be ignored indefinitely while insisting that no reform could succeed without a

consensus. The report added that, in contrast to Anglo-Saxon countries where higher education is more generally perceived as an investment, higher fees could only be introduced in France with the assurance that this will not harm democratisation (Herbillon, 2004). As in the UK, support for higher fees is seen as an opportunity to address the underfunding issue and compete in the knowledge economy. This was stressed in a report to the French Ministry of Economy which strongly advocated a debate about the principle of free HE (Camdessus, 2004). Supporters of higher fees also raise the equity issue: the current system, which combines funding based on low fees and high taxes with a restricted participation by social class, would lead to a "perverse system of redistribution from the least rich to the wealthiest" (Belloc, 2003). Proposed measures vary from sharing the cost of higher education between the state and students (Plassard and Bergès, 1998; Gary-Bobo and Trannoy, 2005) to a deregulation of HE (Lorenzi and Payan, 2003). These controversies are fairly recent and one can expect that such propositions will generate questions on the potential of higher fees to promote equity and on the long-term impact of such a move on participation and the economy.

This article draws on findings from an ESRC-funded research which sought to inform these current debates by examining the long-term links between HE funding and economic fluctuations (Carpentier, 2004b). The aim was to construct and analyse historical series on funding and development of UK universities since the 1920s in order to explore continuities and contrasts with previous HE controversies. Although the article is mainly about the UK, it also intends, by comparing similar historical statistics concerning the funding and development of French universities, to identify similarities and differences between the two countries.

The article is divided into four parts. The first part presents the methodology. The second provides an overview of the main transformations of higher education in France and the UK since the 1920s charting the fluctuations of funding and access. The third part concentrates on the UK and draws on historical perspectives distinguishing different regimes of higher education with specific articulations of funding and access policies. Finally, some conclusions are drawn.

A multidisciplinary approach to HE finance

This article combines economic and historical perspectives within a quantitative approach in order to locate some of the socio-economic driving forces behind the expansion of higher education.

Economic theory and HE policy

Both before and during the debates surrounding the White Paper, there have been fruitful attempts to assess the links between funding and access in higher education and the economy (Barr, 1993; Williams, 1992) and to provide an answer to the fundamental question of "how to pay for mass, high quality higher education" (Barr, 2003b). Following the path of human capital theory (Schultz, 1961; Becker, 1962), many researchers sought to evaluate and arbitrate between public and private funding of HE and its private and social returns (wages and externalities) (Blundell *et al*., 2000; Mace, 2001; Chevaillier and Eicher, 2002; Wolf, 2002; Barr, 2003a; Johnstone, 2004).

This article seeks to contribute to these debates by examining the links between the funding and development of higher education and socio-economic changes through the theory of systemic regulation. This theory attempts to interpret transformations of the economic system in terms of developing connections with spheres (like education) that are influenced, but not fully determined, by economic dimensions (Fontvieille, 1990; Michel, 1999). The theory suggests that, as education may not only represent a cost for the economy, but also furnish a main determinant of its growth, the development of the educational system may be interpreted, in part, as the outcome of regulation processes between public expenditure on education and long economic cycles. Previous work has shown that the fluctuations of public expenditure on education in the UK since 1833 were connected to 50-year Kondratiev economic cycles (Carpentier, 2003). Similar findings were observed in France (Fontvieille, 1990; Carry, 1999).

Moreover, the fluctuations were reversed to economic cycles before 1945 and then synchronised in both countries. Before 1945, the rapid growth of public funding on education during periods of economic downturn may be explained in terms of an attempt to revive the economy. On the contrary, after 1945, the growth of public educational resources accelerated during the period of post-war prosperity, only to go into decline following the economic crisis of 1973. The 1945 transition to procyclical public educational expenditure may represent the recognition of education as a driving force in the economic system rather than simply a means of correction. In this context, the post-1973 reforms would characterise different options in the search for a new regulation process in order to pursue educational development in a context marked by slowing down of public funding. Such a framework strongly echoes the current debates on higher education.

The article proposes to focus on the specific role of higher education in such a process and seeks to investigate potential relationships between economic fluctuations and the level and structure of funding of universities. HE policy is examined in relation to its wider socio-economic environment

(Campbell *et al.*, 2003).The concept of regime of higher education is proposed as an illustration of the interactions between the internal (quantitative and qualitative developments of HE) and external contexts (social change and economic fluctuations) that affect the evolution of higher education. Historically, the successive regimes of higher education would therefore characterise the degree of adequacy between funding and access policies as illustrated by the long-term fluctuations of funding per student.

Towards a socio-economic history of education

This theoretical framework interrogates economic and social interfaces with higher education that were, and still are, major issues for policy making. As Aldrich noted, "the historical perspective indicates the complexity of the relationship between education and economic performance" (1996, p. 109). The historical dimension is therefore crucial in order to reveal the long-term factors that could explain the current relationship between higher education and economic systems. There is a mutual interest in combining economic and historical analysis to understand current educational policies. On the one hand, history can supplement the economic analysis which tends to elude the influence of cultural and socio-political factors on education. On the other hand, some historians of education have recently pleaded for more recognition of the economic dimension in order to interpret past educational policies (Richardson, 1999, p. 132; Goodman and Martin, 2004; Sanderson, 2005).

The approach developed here can be defined as a socio-economic history of education following Simon's idea that "the fundamental educational issues have remained the same through the years – who should be educated, how, to what level or different levels of the service of what social or industrial needs? – So the conditioning social and economic factors continue to operate" (1989, p. 79). The aim of this article is to complement previous histories of higher education (Briggs, 1969; Sanderson, 1972; Anderson 1992) with a particular focus on economic issues through a quantitative evaluation of the impact of past reforms on universities' funding and enrolment.

A quantitative history of funding and development of UK universities (1921-2003)

Following previous quantitative research on higher education (Halsey and Webb, 2000), this study seeks to furnish data about the nature and level of financial resources for higher education, and about the extent to which higher education, in turn, affects the nature and level of resources. The methodology of quantitative history based on the principles of national accounting is used in order to collect and process long-term data (Marczewski, 1961).

The dataset that was produced gathers historical series on funding and development of universities from the early 1920s and is the result of research into primary and secondary governmental and institutional sources; it is now part of the UK Data Archive (Carpentier, 2004c). Funding indicators include the level of the income of universities and its distribution according to its origins (public/fees/endowment/research), the level of expenditure and its distribution by economic categories (wages/consumption/investment). Non-financial data include the number of students and its distribution according to gender, country of origin and other enrolment's characteristics (full or part time and undergraduate or postgraduate), the number of awards and diplomas, the number and structure of staff.

These historical series refer to pre-1992 universities and include all institutions delivering degrees afterwards. It has been difficult to obtain historical data on expenditure relating to advanced courses in colleges of further education. It was also impossible to distinguish between resources devoted to advanced and non-advanced courses within the same establishment. Prior to 1992, therefore, data are supplied only for universities. From 1994, data relating to advanced courses in polytechnics and further education are included.

In addition, the article proposes a comparative perspective dimension which is usually less common for higher education than primary and secondary levels (Crook and McCulloch, 2002). A comparison with the French perspective is helpful in determining the uniqueness or otherwise of the UK development. Previous research highlighted specific developments of HE in France and England in relation to their respective economic policies following the oil crisis of the early 1970s while underlining the possibility of a future convergence (Deer and de Meulemeester, 2004; de Meulemeester, 2003). French data originate from Carry's (1999) quantitative work on education funding until 1996 and have been updated with governmental data (DEP, 1984-2003). Data on enrolment are based on the *Annuaire Statistique de la France* (DSG, 1920-1945; INSEE, 1946-2003). Population data are based on Vallin and Meslé's (2001) work.

The primary aim of this multidisciplinary examination is to investigate the mechanisms that regulated the articulation between the funding and development of higher education and its relationship with the socio-economic system, seeking to resituate the complexity of the current situation.

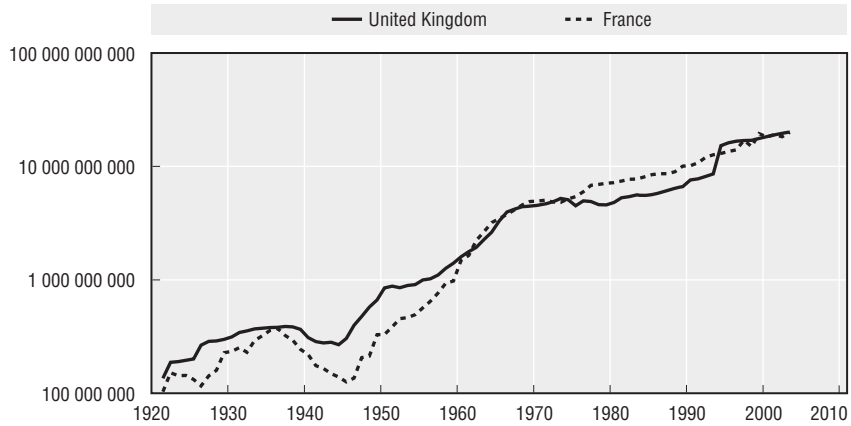
An overview of the growth of the HE system: 1921-2003

Since the early 1920s, UK and French higher education have experienced tremendous transformations. Among them, significant changes in the level and structure of universities' funding and enrolment may explain the current underfunding situation.

The rise of funding and enrolment but the instability of expenditure per student

The first result shows a dramatic increase in funding for UK and French universities. The Geary-Khamis dollar expresses purchasing power parity, eliminating differences in price level between countries (Maddison, 2000). UK and French expenditure at 1990 prices in 2003 are respectively 150 and 190 times greater than in the 1920s. Over the period the share of GDP dedicated to the funding of universities rose from 0.06% to 1.4%. The equivalent figures for France are respectively 0.06% and 1.22%.

Figure 1. **Expenditures of universities (1990 Geary Khamis $), 1921-2003**



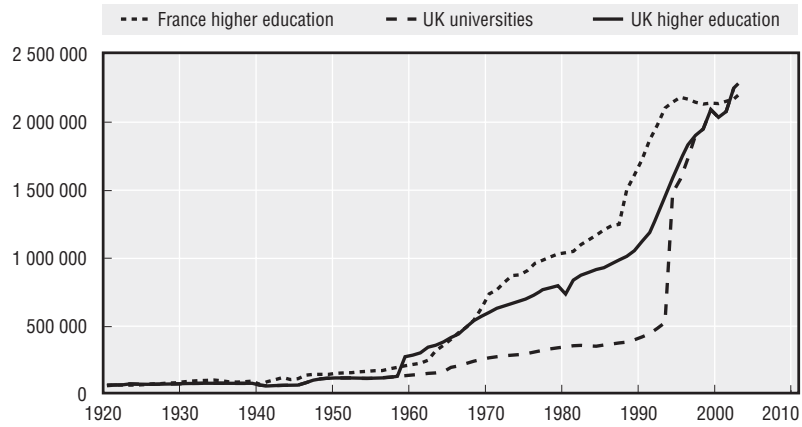
Source: Carpentier (2004c).

However, while expenditure increased, the number of students grew 40-fold in both countries.

More significantly, the number of students in UK universities as a share of the 18-30 age group rose from 1.3% to 25% between 1955 and 2002. In France the ratio rose from 2.1% to 23% (Carpentier, 2004b). This rate is lower than the 43% figure traditionally associated with participation in the United Kingdom and related to the government's 50% target for 2010. The se figures are for the Initial Entry Rate for higher education which sums the percentages of the age group who enter higher and further education colleges for the first time in each year of age between 18 and 30 (Ramsden, 2003).

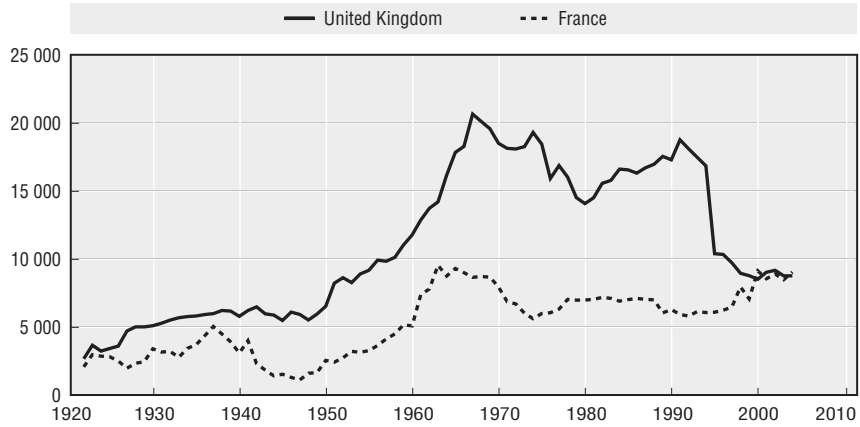
Over the whole period massive increases in enrolment were reflected in massive increases in funding. Nevertheless, there were considerable variations within this overall rise. For example, in 2003, expenditure per student in the United Kingdom was more than 3.5 times its level in 1921 (4.5 times in France). In 2003, however, expenditure per student was less than a half of the level

Figure 2. **Number of students, 1921-2003**



Source: Carpentier (2004c).

Figure 3. **University expenditure per student (1990 Geary Khamis $), 1921-2003**



Source: Carpentier (2004c).

of 1973. It is worth noting that falling expenditure per student, which was one of the central issues of the White Paper, began in 1990, before the re-designation of the polytechnics.

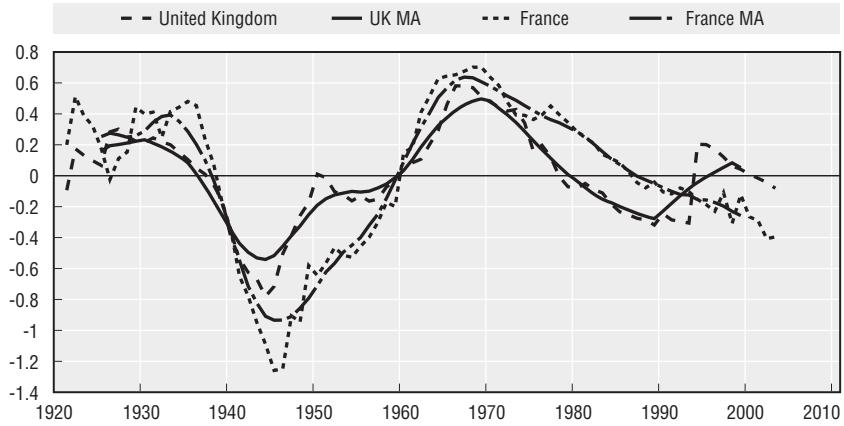
British and French expenditure per student were similar both at the beginning and at the end of the period. Much wider fluctuations, however, occurred in the United Kingdom. The following part examines the origins and consequences of these fluctuations by comparing and contrasting the historical evolution of funding and attendance.

Long economic cycles, university income and access

UK university expenditure conforms to the connections between resources and long economic cycles observed in other levels of education (Carpentier, 2003). The long-term expansion in resources devoted to higher education was not linear and may be related to Kondratiev cycles (Figure 4). Four Kondratiev cycles of approximately 50 years have been identified, each showing expansion and depression phases (1790-1820/1820-1848; 1848-1870/1870-1897; 1897-1913/1913-1945; 1945-1973/1973-?) (Loucã and Reinjders, 1999).

The increase of expenditure during the 1920s was brought to a halt by the aftermath of the 1929 crisis. The period of prosperity following 1945 led to a dramatic rise of expenditure, although this was halted in 1967 as a consequence of a decrease in capital expenditure that had been driven by the expansion of civic universities and the establishment of new universities. The real funding downfall followed the oil crisis of 1973 and continued until the current period, although a revival of expenditure occurred in the early 1990s with the integration of polytechnics.

Figure 4. **University expenditure, 1990 Geary-Khamis $, 1921-2003 (2nd order deviation from the regression curve and nine-year moving averages (MA), R^2 = 0.96 and 0.93)**



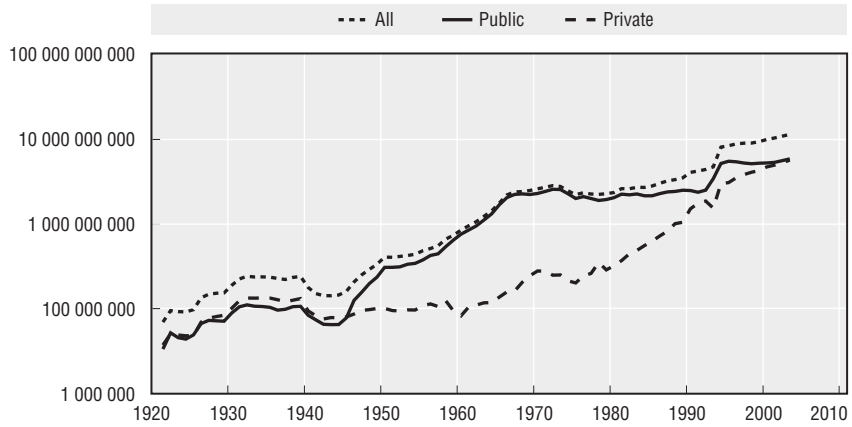
Source: Carpentier (2004c).

A similar pattern may be observed in France where fluctuations also corresponded to Kondratiev cycles. However, France and the United Kingdom experienced different evolutions with respect to the structure of HE funding. There have been some profound organisational transformations in French higher education since the late 1960s resulting in a move away from the old *faculté* and towards the emergence of a *université* identity (Mignot-Gérard, 2003;

Musselin, 2004). The 1968 Faure Act initiated this process by structuring the universities around the principles of autonomy, participation in decision making and multidisciplinarity (Minot, 1984). This process met with some resistance but was continued by the 1984 Savary Act which also broadened the funding of higher education mainly from regional government but also from new private resources. In addition to the traditional private contributions like the *taxe d'apprentissage* (paid directly by firms to universities in exchange of a tax remit) and fees, universities are allowed to generate extra income from donations, contracted services, patents and publications. A 1986 White Paper which sought to raise the level of fees was rejected after intense strikes, while in 1988, a four year contract between universities and the ministry was established in order to move towards a tighter control of funding.

While such reforms represent turning points and a return to the autonomy that universities had lost at the turn of the 18th century (Charle, 1995, p. 17), the income structure of French universities did not change radically over the period. The rise of the share of private resources from 5% in 1960 to 13% today indicates potential developments rather than the transformation of a system which is still essentially publicly funded. In contrast, the relative contributions of public and private resources are key elements in the evolution of the income of UK universities.

Figure 5. **Income of UK universities (GBP 1990), 1921-2003**



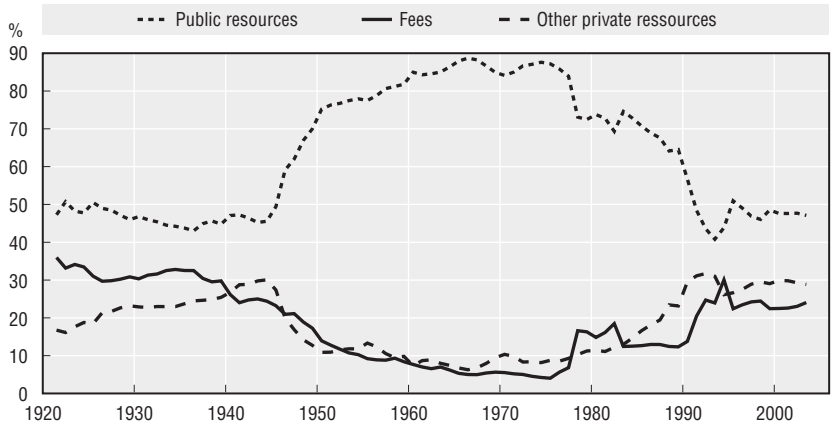
Source: Carpentier (2004c).

Figure 5 shows that public funding was the driving force of university income until the 1980s. Variations in public resources generated the Kondratiev-related fluctuations in HE funding observed above. Public funding nourished the post-war growth of HE income and put a brake on it after 1973 in the context of spending cuts. The revival of income growth did not take place until the

early 1980s with a rise in private funding. However, such an increase did not fully compensate for the reduction in public funds and so only partially restored the overall growth in income.

Figure 6 shows that such movements led to substantial changes in the repartition between public and private income of universities. Between 1921 and 1945 public and private resources contributed in broadly equal amounts to the income of universities. Thereafter the share of public funding rapidly increased and reached 90% in 1973. It then fell, so that by the beginning of the 21st century the 50/50 distribution had been restored.

Figure 6. **Income structure of universities, United Kingdom, 1921-2003**

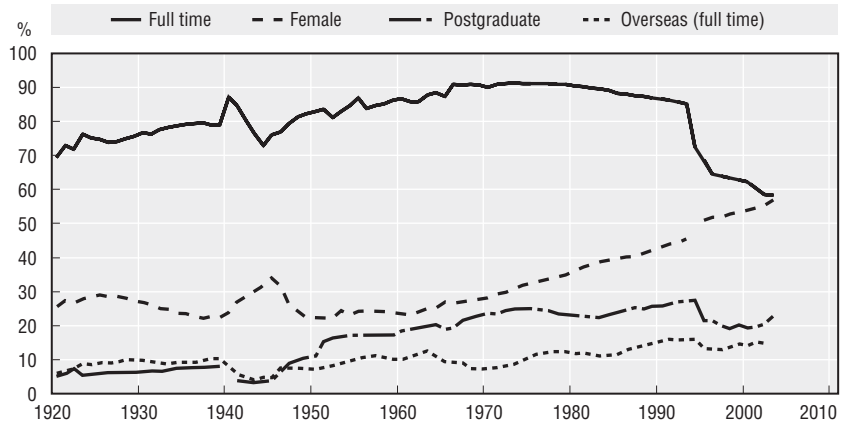


Source: Carpentier (2004c).

Research was also a major part of the transformation of the income structure of UK universities. The share of university specific funding dedicated to research increased from 5% in 1957 to 15% in 2002. The share of public funding of research increased from 50% to 65% from 1957 to 1973 and then started declining to reach 57% in 2002 (Carpentier, 2004c).

The effect of public funding on the income structure of educational institutions was crucial in the development of enrolment in primary education in the late 19th century and in secondary education during the first half of the 20th century (Carpentier, 2003). Such mechanisms became increasingly important in higher education where access policies were still affected by a mixture of public and private funds. In France, where the level of fees remains low over the period, the expansion of enrolment in higher education was mainly driven by policies dedicated to increase participation at the upper secondary level.

Figure 7. **Characteristics of students, United Kingdom, 1921-2003**



Source: Carpentier (2004c).

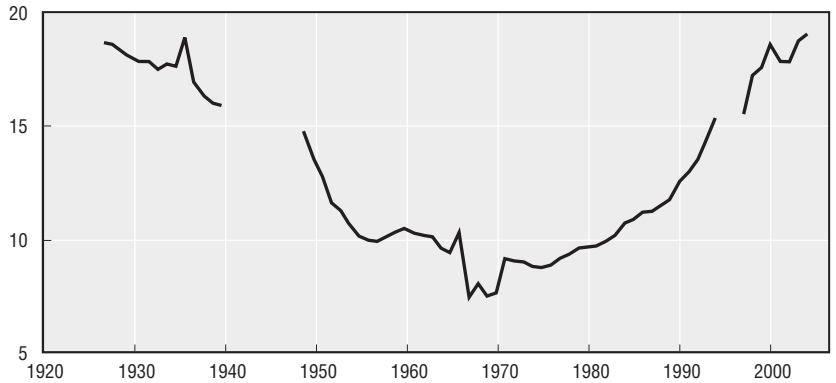
Between 1921 and 1974 the share of university income originating from fees decreased from 36% to 4% and rose thereafter to reach 23% in 2002 (Figure 6). Such changes may have influenced enrolment's extent and characteristics, especially as tuition fees are one of the main factors affecting access. Economic cycles and public resources had an impact on the structure and levels of funding of universities and on the replacement of fees by public funding. This leads to the crucial question: Does access drive funding or funding drive access, or both? Increased enrolment was accompanied by a decrease of fees from 1945 to 1973 (Figure 6), especially after 1958 and the implementation of tuition fees subsidies. The post-1973 era led to the partial withdrawal of subsidies in a context of the control of public funding. The number of new students slowed down during the 1980s to grow again during the 1990s. The impact of the increase of fees on access depends on the crucial role of financial aid to poorer students.

Fluctuations of public expenditure may be associated not only with the number of students but also with a change of their characteristics. The proportion of postgraduates rose from 6% to 23% from 1947 to 1973 and remained stable afterwards. The share of full time students rose from 69% to 90% over the same period and has subsequently dropped to 58% nowadays.

The share of foreign students was quite consistent over the period, driven by the access from students from the Empire and Commonwealth and other overseas students. However, economic fluctuations also provoked changes in policy towards non-European Union students who became subject to full cost fees from 1981. This was encouraged in order to provide extra resources for universities in the context of cuts in public funding since the 1970s.

In contrast, the share of women students was not affected by economic fluctuations (Figure 7). While things are not clear during the inter war years (a possible decrease of women students after the 1930s crisis demands more research), the increasing participation of women in higher education after the end of the Second World War was not jeopardised by the economic difficulties of the 1970s. This confirms Dyhouse's findings that the proportion of women in higher education increased during the 1960s and even more dramatically during the 1970s for various reasons like the drop in early marriages, the new universities of the 1960s, the end of quotas and more career opportunities for women graduate (2005). Therefore, alongside economic explanations, feminisation should be considered as a major factor of the historical expansion of HE enrolment and funding in both countries.

Figure 8. **Number of students per full time academic staff, United Kingdom, 1926-2003**



Source: Carpentier (2004c).

As a whole, all those indicators suggest that the elite system provided many resources compared to the limited number of students, prior to the mass system that developed in the 1960s in a context of growing funding. The increase of enrolment was maintained in the 1970s in a context of diminishing resources. In this context, access might have been developed to the detriment of quality. Figure 8 shows that the student/full-time staff ratio decreased until the early 1970s and increased thereafter. This increase may also be the consequence of the casualisation of staff.

These developments suggest that diminishing funding per student led to a change of characteristics of students and more differentiation. Similar results were observed in France where many researchers insisted on the difference between expansion and democratisation of higher education (Verger, 1984, p. 404; Deer, 2005).

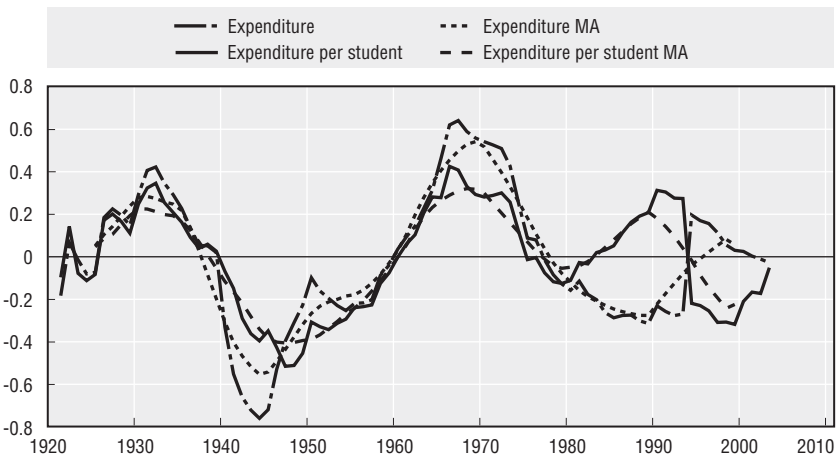
The historical lens seems to show connections between the level and the structure of universities' income and the number and characteristics of the student population. It is then interesting to examine the historical articulation between funding and access policies that could explain the long-term evolution of quantitative and qualitative developments of higher education.

Regimes of HE: the historical articulation between funding and access policies

The following focuses on the UK experience and provides a long-term description of the evolutions of expenditure per student by revealing different historical sequences of articulations between the funding and access policies.

Figures 3 and 9 clearly show different upward and downward phases of expenditure per student, suggesting the alternations of different regimes of higher education. The notion of a regime of higher education seeks to characterise the articulations between the internal development of universities (funding, access, staff, quality) and their external socio-environments (economic fluctuations and social changes). The following seeks to identify these regimes and to examine the factors behind the transition from one to another in order to place the current situation in perspective.

Figure 9. **University expenditure GBP 1990, United Kingdom, 1921-2003 (Second-order deviation from the regression curve and nine-year moving averages (MA)), R^2 = 0.953 and 0.78**



Source: Carpentier (2004c).

1921-1932, rise of spending per student: more resources for a limited enrolment

The creation of the University Grants Committee in 1919 symbolised the growing involvement of the state (Shinn, 1980; Shattock, 1994) in a context where public expenditure increased from 5% to 10% of GDP. Education's share of all public expenditure grew from 6% to 10%. However, the share of public expenditure on education devoted towards higher education remains stable at around 2%. The structure of university income did not change as increasing private and public resources equally drove the rise in funding. University expenditure was multiplied by 3.5. Enrolment was growing at a slower pace than funding, which explains the doubling of expenditure per student over the period.

1933-1944, decrease of spending per student: the stagnation

The Great Depression led to the decrease of non-military public expenditure as a share of GDP. Such movement particularly targeted public expenditure on education which stagnated from 1932 and decreased during the war (Carpentier, 2003). The slower growth of university funding was the result of a brake upon both public and private resources (Figure 5).

Both expenditure and enrolment stagnated and decreased during the war. It is worth noting that reductions in the former preceded the latter. The stagnation of expenditure combined with a moderate growth of enrolment explains the decrease of expenditure per student.

1945-1972, the Robbins era or the golden age

The golden era of British universities is traditionally associated with the Robbins Report (1963) that Lowe considers as the first attempt to co-ordinate the development of a system of HE in modern Britain (2000, p. 83). Nevertheless, the rise of enrolment started earlier. Enrolment rose threefold until 1967 and its share of the 18-30-year-old age group rose from 2% to 6% (Figure 2). One important aspect of this period was that increases in funding preceded the growth of enrolment. This was part of a context where public expenditure on education's share of GDP rose from 2% to 6%. Higher education's share of public expenditure on education increased from 3% to 12%. While public involvement became orientated to all universities (Salter and Tapper, 1994), the share of university income from public funding grew from 50% to 90%. Increases in funding were greater than the growth of enrolment, thus explaining the considerable rise in expenditure per student. Increased public funding promoted enlarged access, by the removal or reduction of fees, and sustained a qualitative development as shown by the decrease in the numbers of students per staff. Students of 1973, as compared with their counterparts in the 1950s,

were increasingly female (from 22% to 30%), studying on a full-time basis (from 72% to 90%) and participating at postgraduate level (from 6% to 24%) (Carpentier, 2004c).

Quantitative and qualitative indicators suggest that this phase was really the golden age for higher education when funding improved access without harming quality.

1973 to 1980, between cuts in spending and democratisation

The 1973 oil crisis opened a new era which marked a decline in public funding of the educational system (Carpentier, 2003). For universities, reductions began in 1967 in a context of declining capital expenditure on new universities which indicated the end of the Robbins era. The major slowdown, however, took place in the aftermath of the 1973 economic crisis. Reductions in public funding were not compensated for by increased private resources (Figure 5). Therefore, the overall level of university income dropped.

The conjunction of high enrolment and a reduction in overall resources led to a 25% decrease of expenditure per student from 1967 to 1980. This period demonstrates a mismatch between funding and access policies that is also observed in France where funding per student dropped by 20%.

1980-1990, the illusory expansion of funding per student

The moderate increase of funding per student during this period was caused by a slowdown in the growth in student numbers combined with a modest increase in funding. The number of new students was stable while the number of students from abroad increased. Full-cost fees for overseas students were introduced in 1980 as one of the first pieces of evidence of the Thatcher approach to higher education. Reductions in public funding, coupled with a rise from private sources (fees and private research) produced a dramatic shift in the public/private income structure (from 86%/14% to 56%/44%).

Access grew slowly and reductions in staffing led to a rise in the student/staff ratio (Figure 8). Staff wages as a share of expenditure fell from 55% to 48% (Carpentier, 2001). The increasing expenditure per student was not the result of higher enrolment connected to even greater rise of funding like it was the case during the Robbins era but was on the contrary the combination of a slower growth of access and a policy of public austerity for which the rise of private funding did not fully compensate.

1990s, the growing disconnection between funding and access

A decline in public funding coupled with an increase in private resources produced a modest rise of total income but the explosion of enrolment led to a dramatic setback in spending per student. The important result is that the

downward trend took place as early as 1990 when subsidies were replaced by loans and before the 1992 act. The polytechnics, whose expenditure per student was lower than pre-1992 universities, deepened the lack of resources per student of the HE system as a whole but did not provoke it. Moreover public grant constitutes 35% of income of traditional universities against 55% for new universities (Webber, 2003). As a result, trends towards more private funding slowed down in 1993 before rising again in 1995. Thus integration into the university sector increased polytechnics' reliance on private income.

1999-?, the stabilisation

In 1999, a brake was applied to the decrease of expenditure per student which began in the 1980s. This new regime of growth is based upon an increase of both public and private resources (the increase of public funding was combined with the increase of fees in 1998 and the rise of private funding for research). Increasing income contrasts with the previous period but does not compensate for the rapid growth of student numbers. The expenditure per student is then stabilised. The White Paper proposed to increase the level of income of universities and to change the structure of funding.

There are still uncertainties about how these reforms will affect the relationship between participation and resources in higher education. The new fee regime may produce changes not only in the level and structure of funding but also in the number and characteristics of students. The trajectories of these indicators will determine whether the 2004 HE act will be viewed as a transition towards a new regime of higher education involving a balanced between funding and access policies or as an instrument to control public funding by returning to a past elitist regime of higher education.

Conclusion

The historical perspective provides evidence on some recurrent mechanisms of articulation between funding and access in HE that can illustrate the successive and interrelated changes that led to the current situation:

- The long-term expansion of universities' resources in the United Kingdom and France was not linear and a consistent link was found with 50-year Kondratiev economic cycles. Post-war growth, ended by the oil crisis of 1973, corresponded with acceleration and, later, a slowdown of funding.
- Economic cycles provoked not only changes in the level of expenditure of UK universities but also dramatic shifts in their income structure. Public funding was the driving force for university income until the mid 1970s. Private funding (including fees) periodically increased in order to replace diminishing public funding, rather than taking the form of additional resources. In consequence, private funds hardly provided an overall rise in the income of universities.

- The considerable fluctuations of structure and levels of funding, combined with a more consistent growth of enrolment, led to a recurrent mismatch between resources for and access to higher education, explaining the wide fluctuations of expenditure per student in the United Kingdom over the period and the current underfunding issue.

The passage from one regime of higher education to another can be connected with economic fluctuations, social changes and demography articulated around crucial turning points and different temporalities (1945, the beginning of massive public funding; 1960s, the expansion of enrolment; 1970s, the control of public expenditure; 1980s, the beginning of private expenditure expansion).

The combinations of those factors led to a reversal of the link between funding and access policies in the early 1980s. Figure 9 shows that the fluctuations of resources and resources per student diverge around that time suggesting that:

- Until 1980, access and funding fluctuate in the same direction, the latter driving the former. The UK experience shows that fees can harm access and highlights the crucial role of financial aid to students as a variable of correction.
- After 1980, changes in the level and structure of universities' income are still linked with economic cycles' impact on public expenditure while access fluctuations progressively become less dependent on economic movements. The rise of participation, which was originally driven by the support of public resources, increasingly responds to political, social and cultural factors. As a result, the students' characteristics and their mode and level of enrolment tend to become variables of adjustment to fluctuations in funding.

With respect to policymaking, such historical trends question whether, in the future, increased fees will be a substitute for public spending. Or will higher fees be combined with even greater increases in public funding as part of a national project to support HE students from all social backgrounds and to boost expenditure per student?

This article did not deal with another important issue raised by the 2004 HE Act which relates to the potential effects of the introduction of the variable fees upon higher education institutions. Supporters of the Act have considered the introduction of variable fees as an opportunity to increase diversity and promote efficiency in English higher education, while its opponents see it as a potential source of tension and inequality between institutions. Current data highlight significant discrepancies between the patterns of development and funding of UK universities (or groups of universities). Research also shows that the expansion of higher education combines with growing differences in

students' profiles between institutions (Reay *et al.*, 2005). Those discrepancies also exist in France where there is a strong hierarchy within universities and between universities, *Grandes écoles* and *Instituts universitaires de technologie* (Bourdieu and Passeron, 1964; Bourdieu, 1989). A recent study investigated the different strategies that individual universities may develop in order to adapt to the new environment brought by the reform (Temple, Shattock and Farnham, 2005). Such prospective research could be complemented by a historical and quantitative investigation into how past reforms of funding and access impacted on the different kind of institutions that shaped the HE system over the last century.

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Twelve Propositions on Diversity in Higher Education

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This paper explores the relationship between the diversity within a higher education system and five key factors, namely: the environment, policy intervention, funding, competition and co-operation, and ranking. The exploration is based on the extent to which higher education systems, particularly those of Australia and New Zealand, have accommodated distinctive forms of higher education institutions characterised by the older traditional university at one extreme, and the newer university of technology at the other. Twelve interdependent propositions on diversity are proposed and discussed. These propositions indicate the ways in which each of the five key factors may influence institutional diversity or convergence. In the majority of circumstances, the convergent tendencies of institutions will predominate unless very specific environmental and economic conditions prevail, and/or specific directed policy is implemented.

Introduction

Up until the Second World War, university education remained the domain of the elite (Perkin, 1991). However, after the war, this changed dramatically. Goedegebuure and Meek (1997) have identified five phases of higher education development in the post-war years, namely:

1. Rapid expansion in the 1950s and 1960s.
2. Diversification in the 1960s and early 1970s.
3. Consolidation and the establishment of more economical alternatives to the university in the late 1970s.
4. A focus on specific issues such as diversity, quality improvement, efficiency and internationalisation in the 1980s.
5. Reduction in public expenditure and a focus on economic viability in the 1990s.

To the above list could be added the commercialisation of research products and observable contribution to the knowledge economy. As discussed later, this further heightens the role of research as a primary differentiator of higher education institutions.

The first phase, that of rapid expansion, was the most critical, and was the catalyst for diversification and the establishment of more economical alternatives to the university that were to follow. In Western Europe, the United Kingdom, North America, Australia and New Zealand, governments embraced the notion of mass participation, but somewhat belatedly came to appreciate the implications of such a dramatic change for an expensive and stretched university system.

There was therefore widespread policy development in the 1970s to establish alternatives to the university which would accommodate the rapid increase in demand for tertiary education for a sector of the population that largely comprised first generation tertiary students. This resulted in the establishment of short-cycle institutions (Neave, 2000) which concentrated on vocational education and skills-based training, such as community colleges in the United States and Canada, polytechnics in the United Kingdom and New Zealand, and colleges of advanced education and technical and further education in Australia. Apart from the view that these sorts of institutions were the most suitable for students for whom an academic university education was thought

inappropriate, they were also cheaper to run, and therefore were strongly promoted by government policy. Their introduction led to the establishment of binary higher education systems.

In many countries these new types of tertiary institution were allowed to offer degree level education. They expanded rapidly, especially during the 1980s and 1990s, and, as their degree enrolments grew, they began to consider the perceived benefits of university status, and eventually to seek redesignation. In some countries, such as the United Kingdom, this redesignation occurred by legislative decree and the polytechnics became universities overnight (Pratt, 2000). In Australia, the binary divide was removed and the colleges of advanced education progressively (and rapidly) became universities by a range of processes frequently involving mergers between colleges or between colleges and existing universities. In New Zealand, a conservative approach to higher education meant that the attempts of polytechnics to be designated universities were resisted, even when they were offering postgraduate degrees including the PhD.

Throughout this period of dramatic change one constant underpinned policy development in many higher education systems. This was the publicly stated desire by governments to promote diversity and differentiation amongst their higher education institutions. This fundamental policy driver has been used to justify the establishment of both binary and unitary systems. However, regardless of the regular reconfirmation of this broad policy, there has been a steady trend in most of these higher education systems towards increasing institutional conformity. This paper explores the facts and fallacies of the issues that have promoted either diversity or conformity amongst higher education institutions, and puts forward some propositions on diversity in higher education based on the experiences of a range of national higher education systems, with particular reference to those of Australia and New Zealand.

Historical context

The university has a long and colourful history, from its 12th century origins in Bologna and Paris, and later in Oxford and Cambridge, through to its late 20th century proliferation as western nations adjusted to the rapid increase in the need for higher education, and rapid growth in participation, after the Second World War. Two aspects of this history are particularly relevant to the theme of this paper.

Firstly, while the post-war university has tried to distance itself from the clutches of vocationalism, leaving this activity to "lesser" institutions such as polytechnics, technical institutes, colleges of advanced education, community colleges and the like, it must be acknowledged that, in reality, the university has always been a vocational institution, particularly in Australia and New Zealand.

The first universities were set up to train the elite for service in state and church bureaucracies, and for the emerging professions of the clergy, law and medicine (Perkin, 1991), and these professions have remained cornerstones of the university ever since. During the Middle Ages, the place and influence of the university waxed and waned, and in England was reduced to training the landed gentry in the social graces and political awareness. By the 19th century, however, with the impact of the Industrial Revolution affecting all levels of society, the university began to take on many of the characteristics of its present form. Significantly, it was the break from the Oxford tradition initiated by the Industrial Revolution in the early 19th century, epitomised by the establishment of, first London University, and later the other "redbrick universities" of the United Kingdom which re-emphasised the university's vocational mission (Patterson, 1997). A similar, although less acrimonious, development took place at more or less the same time in the United States, with the establishment of the Morrill "Land Grant" universities in the late 1800s (Morrison, 1965). These new universities, like their redbrick cousins in the United Kingdom, placed emphasis on practical education for vocational purposes.

Secondly, perhaps the most significant development to influence the form of the university as it exists today was the German 19th century notion of the research university and the PhD degree based on empirical enquiry. Nearly 200 years later, pure research is generally regarded as an essential if not dominant component of a traditional university's activities. This contrasts somewhat sharply with the approach to research adopted by many newer universities which, by virtue of their vocational training history, have tended to place less emphasis on pure research and more emphasis on applied research that informs both teaching and practice. Presently, in most universities, there has been a shift towards funding of applied knowledge production that is having a demonstrable economic impact.

The traditional university at the start of the 21st century, then, could be considered as one which is characterised by a somewhat contrary attitude towards vocationalism, considering its history and reliance on professional training, and a passionate attitude towards the value and significance of research. By contrast, it could perhaps be said that the newer universities are characterised by a passionate attitude towards the value of vocational education and training, and a somewhat contrary attitude towards research. Of course, these two images are presented as "ideal types" for analytical purposes and it is recognised that in reality there may be a bluring of mission and function.

This paper will make frequent reference to issues of contrast between the "traditional" university and the "new" university, especially as they have evolved in Australia and New Zealand. The former are characteristically older universities with a strong research focus supporting traditional disciplines.

They are exemplified in Australia by the "sandstones" and "redbricks" (Marginson, 1999), and in New Zealand by the "limestones" (Codling and Meek, 2003). The "new" universities are often called universities of technology, and are invariably young universities, with historical roots in trade and technician training, which emphasise applied and vocational education and research, frequently in new or emerging disciplines. They are characterised by the "unitechs" (Marginson, 1999) in Australia, and by Auckland University of Technology (AUT) and (almost) Unitec Institute of Technology[1] in New Zealand.

These two forms of university are considered to represent counterpoints on a continuum of contemporary university types. Over the last 15 years there has been a tendency for traditional universities to drift towards universities of technology through a process of vocational drift and an increasing emphasis on applied/commercially relevant research, and a complementary tendency for universities of technology to drift in the opposite direction through a process of academic drift. These relationships are summarised in Figure 1 below, and are fundamental to the development of the propositions on diversity in higher education presented in this paper.

Figure 1. **The relationship between academic drift, vocational drift and university type**



Diversity in higher education

In the context of higher education, the terms differentiation and diversity are used to describe a wide range of phenomena related to differences between and within higher education systems (Stadtman, 1980; Birnbaum, 1983; Huisman, 1995; Kivinen and Rinne, 1996; Meek *et al.* 1996). A most useful general definition of diversity is offered by Trow (1995), and cited by Meek *et al.* (2000). Trow describes diversity in higher education as:

> "[…] the existence of distinct forms of post-secondary education, of institutions and groups of institutions within a state or nation that have different and distinctive missions, educate and train for different lives and careers, have different styles of instruction, are organised and funded and operate under different laws and relationships to government" (Meek *et al.*, 2000, p. 3).

This definition, strictly referring to systemic or institutional diversity, will be adopted for this paper, which is concerned about differences between institutions within a single higher education system.

Having such a definition is one thing, applying it is another. Much of what has been written about diversity has used qualitative and anecdotal evidence to describe differences between institutions. Relatively few researchers (for example, Birnbaum, 1983; Huisman, 1995, 2000; Meek and Wood, 1998) have looked at ways of measuring differences between institutions. However, one of the critical issues for these quantitative analyses is the selection of variables, and the meaning that is attached to them. As Huisman (2000, p. 45) points out, at one extreme it is possible to select such an extensive group of variables as to make every institution unique, thus achieving theoretical maximum diversity for the higher education system. Another critical issue is the selection of the appropriate analytical methodology, and Huisman demonstrates that different techniques can produce different results for the same data set.

Huisman offers a conceptual model to deal with these issues. Essentially this involves selecting variables, gathering meaningful data on these variables and establishing institutional profiles, applying relevant analytical techniques, and finally interpreting the results in terms of institutional diversity (*ibid*, p. 44). However, he does not address the key issue of how to decide which variables to use in an investigation of institutional diversity within a higher education system.

One of the fundamental difficulties with the selection of variables and consequential measurement of diversity is that diversity means different things to different interest groups. From an applied perspective, it is considered important to identify the stakeholders for whom the notion of diversity is meaningful, and then to establish what that notion is. An appropriate selection of variables should then be possible. For example, the government is a key stakeholder in the higher education system of any country, and as indicated elsewhere in this paper, in many countries government policy is based on the concept of a diversified higher education system. For the government, this diversity is likely to be determined by a consideration of the system as a whole, and the range of institutions within the system based on broad highly visible institutional parameters such as mission, student load, programme level and research activity. In other words, using the biological model, governments are more concerned with varieties of institutional types within a system, which might be considered as genera, than with the different species which may comprise each genus.

By way of contrast, the student, another essential stakeholder in a country's higher education system, has a quite different perspective on diversity. For the student, diversity relates to choice, and is based on parameters

such as access, location, programmes, reputation and cost. For students the notion of diversity is also only meaningful for that group of institutions to which they can readily go. Systemic diversity across a national system is therefore meaningless to students if the only institutions to which they reasonably have access are all the same.

This paper does not attempt to quantify institutional diversity. It attempts to establish some propositions about diversity based on the extent to which higher education systems, particularly those of Australia and New Zealand, have accommodated the development of distinctive forms of university characterised by the older traditional university on the one hand and the newer university of technology on the other. These propositions should be further tested by the selection of quantifiable variables appropriate to the perspective of diversity under investigation.

Propositions on diversity

While many post-war governments have consistently espoused support and commitment to the notion of diversity in their higher education systems, they have, with few exceptions, been strong on the rhetoric and weak on the policy initiatives to effect it. In general, it could therefore be argued that many higher education systems, and the institutions within them, have evolved, particularly over the last 10 to 15 years, in the absence of effective policy, not because of it. The end result has not been increased differentiation between institutions, but rather a drift towards institutional homogeneity. Some key reasons for this are examined in the sections to follow, and presented as a series of propositions about diversity and differentiation in higher education. They have been referenced to five factors which influence, or are influenced by, the diversity of a higher education system, namely: the environment, policy intervention, funding, competition and co-operation, and ranking. Whilst the propositions are grouped under each of these headings, it should be recognised that there is an interdependence between all of them.

The environment

Biological concepts are frequently used in discussions on institutional diversity (Huisman, 1995). Using the biological analogy, variation in species is more likely to occur in a heterogeneous ecological environment, as organisms adjust to different local conditions. By contrast, if adapting organisms are subjected to the same environmental conditions, they will tend to evolve convergently. In the world of higher education, the organism becomes the institution and the ecological environment becomes the higher education system.

The environmental conditions influencing the development of a higher education institution are affected by factors such as student choice, stakeholder influence, the economy, local government and history. With each factor, variation in environmental conditions across a higher education system will inevitably promote variations in response by local institutions and will foster diversity. In contrast, uniform environmental conditions will promote similar responses from individual institutions and promote homogeneity across the system. This point is well made by File *et al*. (2000) who postulate that "the larger the uniformity of environmental conditions of higher education organisations, the lower the level of diversity of the higher education system" (*ibid*, p. 15).

Student choice is a critical factor in the promotion of distinctiveness and diversity in higher education. A diversified higher education system is frequently supported on the basis that it provides prospective students with genuine choice and/or opportunity. However, genuine choice only occurs if the student has ready access to a range of institutions. Access, in turn, is dependent on a number of intersecting issues such as mobility, accommodation, cost and lifestyle. In Canada, for example, population centres supporting higher education institutions tend to be dispersed across the country, and choice in a practical sense for most students tends to be limited to those local institutions which are reasonably accessible within a single population centre. This has led to a lack of diversity across the Canadian system, with each institution tending to provide the same range of opportunity for its local population under uniform funding conditions which also promote convergence (Jones, 1996).

The Canadian experience has parallels within New Zealand, although the scale is quite different. Outside Auckland, the largest population centre by a significant margin, there tends to be a single university and a single polytechnic in each major population centre. New Zealand students are not known for their mobility, and most seeking higher education tend to go to the nearest institutions. Given the uniform funding regime for New Zealand higher education, it is therefore not surprising that, like Canada, there is a lack of diversity amongst New Zealand's universities and polytechnics.[2] Importantly, this should not be regarded as a deleterious situation, but rather as an appropriate response for a higher education system which is offering equality of opportunity to its potential students.

Stakeholder influence is another environmental factor which may affect diversity. Probably the best example of a national higher education system in which variations in stakeholder influence contribute to systemic diversity is that of the United States. Religious groups, ethnic minorities, industry and local government have each played a significant part in shaping the development of different types of tertiary institutions in different parts of the United States (Geiger, 1996). By contrast, in smaller countries such as New Zealand, where stakeholder influence tends to be more uniform across the whole country,

there is therefore little contribution to the heterogeneity of institutional types. There is potential for this to develop however, if, for example, new and emerging professions continue to favour the newer universities of technology while the older professions maintain allegiance to the more traditional universities.

A uniform national economy has an obvious levelling effect with respect to institutional diversity. Under this circumstance, it could be argued that institutions all tend to react the same way to the same changes. Again, New Zealand, as a small country with little regional variation to the economy, is a good example of this. Where a country is large enough to sustain regional economies that might not be congruent, such as the United States, there would be a greater likelihood for different institutional responses to different economic conditions. The different responses of local government may also play an important role in shaping the part of the higher education system over which they have an influence.

History sometimes exerts environmental influence on the diversity of institutions within a higher education system. Where a strong university tradition exists, it is difficult for a new kind of university to be accepted. Such is the case in New Zealand, where Unitec's overt objective to become a university of technology has been thwarted by the conservative influence of the New Zealand Vice Chancellors' Committee. Under such circumstances, universities tend to be much the same, and new institutions are forced to conform to the prevailing conservative model in order to gain acceptance.

The influence of environmental conditions on the institutional diversity of a higher education system could therefore be summarised by the following pair of propositions:

1. The greater the uniformity of the environmental conditions within a higher education system, the lower the potential for systemic diversity.
2. The greater the variation in environments within a higher education system, the greater the potential for systemic diversity.

Policy intervention

Government policy undoubtedly has a most critical influence on systemic diversity. In national systems such as those of Australia, the Netherlands, New Zealand, Sweden and the United Kingdom, convergent tendencies predominate amongst higher education institutions because policy and regulation are not strong enough to sustain differences between institutions.

If there is no significant variation in environmental factors that will increase the potential for systemic diversity, the environment can be considered essentially homogeneous. This is the prevailing condition in many larger countries and most small countries, including New Zealand. In

this homogeneous environment, diversity has ebbed and flowed as governments have tried different policy approaches to promote diversity amongst their higher education institutions.

The most obvious intervention designed to promote diversification is that which establishes a binary system of higher education institutions, which in theory guarantees that at least two distinct types of institution will exist within a higher education system. Binary systems became common in western countries as their governments grappled with the dramatic increase in participation in higher education after the Second World War. Second tier institutions were invariably introduced as cheaper, short-cycle alternatives to the established (and expensive) universities (Neave, 2000). With few exceptions, however, these new institutions, variously known as polytechnics (New Zealand and United Kingdom), *Fachhochsculen* (Germany), HBO institutions (higher professional education institutions in the Netherlands), and colleges of advanced education (Australia), have exhibited clear, deliberate and convergent "academic drift" towards a university model. This has occurred because government regulation to support a binary system was not strong enough to prevent it happening.

Two good examples of this occurred in the higher education systems of the United Kingdom and Australia. In the United Kingdom, there have been two major attempts to establish a binary system, firstly with the creation of the Colleges of Advanced Technology in the 1950s, which were absorbed into the university environment ten years later, and secondly by the creation of the polytechnics, which were established as a genuine degree-granting alternative to the university in the late 1960s, and became part of the university sector in 1992. Both cases illustrate the inevitability of institutions which perceive themselves as being of lower status (despite plaintive government protestations of being "equal but different") seeking to raise their status by becoming more like their more illustrious alternatives. In Australia, a similar series of events occurred. The Australian government established the Colleges of Advanced Education (CAEs) as a genuine degree-granting alternative to the universities in the 1960s. By the mid 1980s many of these colleges had developed to become so much like the universities that the binary system was doomed, and in 1988 Australian higher education was reconstituted into the Unified National System. Once again, the isomorphic tendencies of the CAEs were inevitable, given absence of a strong regulatory environment to prevent them occurring. Indeed, the policies of that period, far from promoting diversity, "seemed to encourage an unhealthy duplication of function and programmes" (Goedegebuure *et al*., 1993, p. 396).

It is important to recognise that the convergence of university and non-university institutions was not solely the result of isomorphism on the part of the non-university institutions. In Australia, for instance, there were signs in

the 1980s of universities taking on more of the characteristics of the colleges of education at the same time that the reverse was occurring. This convergence has continued even after the binary system has been replaced by a unitary system. This was in spite of the Australian government's pronouncement that the new unitary system would "… promote greater diversity in higher education rather than any artificial equalisation of institutional roles… Diversity and quality are paramount; the unified system will not be a uniform system" (Dawkins, 1988, p. 28).

Institutional convergence is well illustrated by the recent histories of the Australian universities. Even though the "university of technology" on the one hand, and the traditional "sandstone" university on the other may be justifiably regarded as the most distinctive types of university in Australian higher education, they have still shown clear signs of convergent behaviour. For example, the more traditional universities have exhibited vocational drift by:

- adopting more applied missions;
- developing active partnerships with industry and the new professions;
- offering more qualifications with overt vocational outcomes;
- generating more applied research funded by industry;
- becoming more enabling with their admission policies to encourage non-traditional learners.

At the same time, newer universities, like the universities of technology, have exhibited academic drift by:

- appointing more traditional university trained and experienced academic staff;
- adjusting their organisational cultures to be more academic;
- shifting enrolment patterns to include more school-leavers;
- broadening their research focus and increasing its emphasis;
- adopting much of the symbolism and nomenclature of the traditional university.

The drivers for this convergence and resultant reduction in systemic diversity are two-fold. Firstly, convergence is driven by a desire for status emulation on the part of some universities which are ranked at the bottom of official and unofficial leagues tables. Secondly, and more significantly over most of the last decade in Australia, it has been driven by a competitive spirit amongst universities during a prolonged period of market growth and institutional prosperity in a deregulated market environment. In such a deregulated environment, with a uniform funding regime, institutions will inevitably tend to respond to similar stimuli in similar ways, and to become more and more alike.

Similar convergent tendencies have occurred in many European higher education systems, even where governments have attempted to maintain differences between institutions. For example, the almost subversive activities of the Dutch HBO institutions to move into postgraduate education and to change their names to include the word "university" have occurred within a weakly regulated binary system (Goedegebuure and Huisman, 2000). By contrast, Finland, which for a long period maintained a strong centralised and uniform higher education system comprising only universities, introduced a non-university sector in the 1990s comprising *ammattikorkeakoula* (AMK) institutions. This new binary system is still subject to tight central control, and the Finnish government is maintaining the clear distinction between the AMK institutions and the universities by regulation. It remains to be seen how long this distinction can be maintained, given the experience of binary systems in other countries.

The lesson from these international experiences is straightforward: in a homogeneous environment the natural tendencies for institutional convergence will prevail in a higher education system unless clear and overt policy intervention is enacted to prevent it. Three related propositions can therefore be put forward:

3. In a higher education system existing in an essentially homogeneous environment, the greater the formal policy intervention to promote diversity, the greater the potential for systemic diversity.
4. Binary systems promote diversity providing that policy and regulation limit the natural tendencies for institutional convergence.
5. Unitary systems do not in themselves promote diversity.

Financial incentives

One of the most powerful forms of policy intervention that a government can use to maintain differences between institutions is that of higher education funding policy. However, few countries appear to utilise it for this purpose. In Australia, for example, the Commonwealth's uniform funding provisions and accountability requirements are a prime driver of institutional conformity (Coaldrake and Stedman, 1998). If institutions are funded in exactly the same way for the same outputs, then they will inevitably seek the same ways of maximising their income through this provision. Similarly, the accountability requirements that go with a reasonable level of institutional autonomy also tend to breed the same responses to the uniform requirements of the system.

At best a uniform funding regime can be said to do nothing to encourage institutional diversity, in spite of the ideologically driven contention that autonomous institutions operating in a competitive market will automatically diversify if given sufficient independence. By contrast, targeted funding

policies can actually promote institutional convergence when they do not have explicit diversity objectives.

Two examples of this have occurred in Australia. Firstly, research funding distributed according to specific institutional research performance indicators leads to a hierarchy of universities which has the inevitable consequence of encouraging poorly funded lowly-ranked universities to emulate the research performance of those higher on the ranking ladder in order to increase their research income. This promotes a trend towards uniformity in research performance. This is a desirable and intended outcome if the overall research performance of the system is raised, but carries with it the unintended outcome of institutional convergence. This is particularly evident where new universities are seeking a recognition of activities rendering research more useful to industry and society such as consultancy and technology transfer. If these activities are not recognised in the performance criteria by which funding is distributed, and if more conservative and traditional research performance indicators are used, the consequence is that some universities are forced to abandon their alternative and possibly innovative approaches to research to ensure that funding flows in their direction.

The Australian government itself has recognised that the way in which it funds research has encouraged uniformity and has increasingly introduced various perfomance-based research funding schemes to promote diversity. In 2005, the government began an exercise to create a new funding regime for research somewhat along the lines of the Research Assessment Exercise in England, with the expressed intention of differentiating the higher education system into research intensive and teaching only institutions. The precise characteristics of the scheme are not yet know, much less the results.

Australia's initial experiment with quality assurance is another example of financial incentives working against diversity. In the early 1990s, Australian universities were provided with financial incentives to improve quality in their institutions. Some AUD 2 million was allocated over the three years that the system operated, and "where these arrangements have directly influenced funding allocations they have been powerful forces for change, at least for compliance with the parameters for assessment" (Coaldrake and Stedman, 1998, p. 153). In other words, those institutions which faired poorly in the distribution of quality funding, and were lowly ranked, sought to improve their ranking and their income by copying the activities of the most successful, which were dictated by the "parameters for assessment". Once again, this is a positive and intended outcome for the targeted funding if the overall quality of Australian universities is enhanced, but carries with it the unintended outcome of reduced diversity.

Deregulated funding systems on the one hand and targeted funding systems on the other therefore do not in themselves promote systemic diversity. Only a funding system with the explicit objective of increasing diversity is likely to achieve this end. This might take the form of funding incentives for an institution to stay as it is, or funding disincentives if the institution deliberately seeks to emulate the performance of a different kind of institution. This leads to the formulation of two further propositions:

6. The greater the financial incentives within a higher education system that do not have explicit diversity objectives, the greater the potential for institutional convergence.
7. The greater the financial incentives within a higher education system that do have explicit diversity objectives, the greater the potential for systemic diversity.

Competition and co-operation

The experiences of the Australian higher education system over the last decade, and similar experiences in many deregulated higher education systems in other parts of the world, suggest that competition, rather than promoting diversity as policy makers had intended, has actually promoted convergent tendencies amongst institutions. This occurred for a mix of reasons that have been discussed by numerous writers (Meek and Wood, 1997; Marginson, 1998; Marginson and Considine, 2000; Fairweather, 2000; Meek, 2000; Neave, 2000). What is not made clear in these discussions is whether it is specifically the competitive environment which has forced institutions to copy one another in order to be more successful, or whether it has been a competitive deregulated environment coupled with overall economic prosperity which has promoted this convergence. Conversely, a competitive environment during times of genuine economic stringency may well promote systemic diversity.

Notwithstanding this possibility, competition amongst Australian universities has led to a reduction in the differences between institutions because the universities have had sufficient resources to invest in mimetic behaviour (Marginson and Considine, 2000). Some of this convergence has been the result of the unintended consequences of funding policies developed to meet quite different objectives. The funding of research and institutional quality in Australian higher education, as outlined in the previous section, have both resulted in mimetic behaviour and a consequential loss of diversity as institutions have competed for a finite pool of resources by copying the performance of the more successful. Overall, then, in spite of the complicating influence of economic prosperity, competition would appear to have promoted convergence amongst Australian universities, as it has done in the United States and many European countries which have promoted a deregulated

higher education environment. However, the relationship between a competitive market and institutional diversity may not that simple.

According to Geiger (1996), based on his study of diversity amongst United States higher education institutions, there is a relationship between the propensity for systemic diversity and the flow of resources. During periods of rapid growth and high student demand, newer, less prestigious institutions tend to have both the resources and the opportunity to develop new systems that duplicate those of more successful and highly regarded institutions so that they can compete with them for top staff and top students. The higher education system therefore drifts towards conformity.

By contrast, during times of economic stringency and low demand, institutions are faced with survival, and fierce competition occurs as institutions compete for a share of a diminished market. Under these circumstances, institutions are forced to innovate and seek new markets in order to survive, and thus "hard times encourage diversity" (Geiger, 1996, p. 200). There is a strong biological analogy here, with new forms occurring when a species is required to adapt to a changing environment in order to survive, while an absence of environmental change promotes a normalised population.

The impact of economic prosperity on the evolution of a higher education system is an issue that governments, in setting their education policy, do not necessarily appear take into account. This is evident in the policy initiatives of both Australia and New Zealand over the last ten or so years which have been based on a simplistic belief that a competitive environment will foster institutional diversity and, more significantly, that a competitive environment actually existed. The work of Marginson (1998), Meek and Wood (1997), and others suggests that, at best, higher education operates in a quasi-market and that a true competitive environment does not exist. They also indicate that competitive elements tend to drive convergent rather than divergent tendencies amongst institutions. This issue is addressed further in the next section. More directly relevant to the issue of economic prosperity is the fact that in Australia and New Zealand, during most of the last decade, demand for higher education was so high and growth so readily attainable that higher education institutions did not need to compete with one another at all. Growth was not dependent on increasing one's market share; it occurred simply by maintaining one's share of an increasing market.

Under these circumstances of economic prosperity, Australia's universities tended to diversify *internally* to meet demand. The newer universities offered new programmes, in response to demand, particularly at the postgraduate level, and increased their involvement in basic research, which had been the more-or-less exclusive domain of the more traditional universities. At the same time, the more traditional universities were responding to the growing demand of

first generation higher education students, including those who had completed technical and further education qualifications and who had traditionally enrolled in the CAEs and newer universities. They were also capitalising on consultancy and applied research funding coming directly from industry. In other words, the traditional universities moved towards the newer universities through a process of vocational drift, while the newer universities moved towards the traditional universities through a process of academic drift. The result was institutional convergence.

In both Australia and New Zealand, this period of economic prosperity and unfettered demand has now ended. Universities in both countries are now entering a period of economic constraint and a diminishing market, and time will tell if the trend Geiger has observed in the United States that "hard times encourage diversity" (Geiger, 1996, p. 200) becomes a reality. The overall relationship between economic prosperity and diversity can thus be expressed in the following pair of propositions:

8. During periods of high student demand and resource flow in a deregulated competitive market, the potential for institutional convergence increases.
9. During periods of low student demand and limited resources in a deregulated competitive market, the potential for systemic diversity increases.

By way of contrast to the impact of competition, it is interesting to look briefly at the effect of co-operation between institutions on systemic diversity. Little research has been done on this relationship, but the work of Jones (1996) on Canadian higher education suggests that co-operation and sharing between universities has promoted isomorphic tendencies as "a successful innovation at one institution is often adopted by others" (*ibid*, p. 86). Significantly, genuine co-operation can only occur in a deregulated environment when institutions do not see themselves competing for funding and/or students. This is a rare occurrence in most higher education systems. Canada therefore may well be somewhat unusual in this regard, due to the dispersed nature of its population centres, and the fact that funding is controlled by provincial governments rather than by the state. Despite its rarity, however, it seems reasonable to accept that institutions which openly co-operate and share best practice will tend to become more alike, and will therefore tend to promote institutional convergence.

The impact of co-operation on systemic diversity could therefore be summarised in the following proposition:

10. The greater the co-operative activity between institutions within a higher education system, the greater the potential for institutional convergence.

Ranking

Regardless of the genuine diversity which might or might not exist in a higher education system, there is a natural tendency for the institutions of that system to be ranked by their stakeholders. This ranking may be official in that it is related to a specific funding objective set by government, such as research performance or quality, with the result that the more highly ranked institutions receive a greater share of a finite pool of funds. It may be unofficial but well established, such as the ranking promoted by the *Good Universities Guide* in Australia, and other consumer oriented ranking systems such as that published each year by the *Times Higher Education Supplement* on United Kingdom universities. It may also be entirely informal and anecdotal, and based on factors related to institutional age, wealth and perceptions of prestige, and myth.

For example, in Australia, while the *Good Universities Guide* publishes a comprehensive ranking of Australian universities each year, based on reasonably sound and objective evidence, there remains a general public perception that the oldest, wealthiest universities, namely the "sandstones" and to a slightly lesser extent the "redbricks", are the most prestigious and therefore the top ranked universities in the country. The same is true in New Zealand, where, the "limestones" are the oldest and are perceived to be the most prestigious and therefore assumed to be "the best". The newer universities are somehow seen as being not quite as good.

In a slightly different way, ranking of universities has become an unintended outcome of the Carnegie Classification of United States higher education institutions. The doctoral/research-led universities tend to be the oldest and wealthiest and are acknowledged as the most prestigious, and are therefore perceived to be "the best" and the masters and baccalaureate colleges are ranked below them.

The pubic ranking of institutions, based on perceptions with or without objective reference, exists in most higher education systems regardless of the extent of real differences between them. As Smith and Webster (1997, p. 105) comment in regard to the universities of the United Kingdom, "it is an absurdity … to suggest that differences [between institutions] are such as to subvert hierarchy". However, there is no obvious relationship between ranking and institutional diversity. For example, referring to the three examples quoted above, the United States can be considered to have a highly diversified higher education system, Australia has considerably less diversity but differences between universities are still apparent, while in New Zealand there is little institutional diversity amongst its universities (Codling and Meek, 2003). Significantly, in each case the country's universities are still formally or informally ranked. In other words, to use Marginson and Considine's distinctions

(Marginson and Considine, 2000), vertical diversity is essentially independent of horizontal diversity.

There is an interesting anecdotal consequence of an informal institutional ranking system based on age and perceptions of prestige (as is the case in New Zealand). Once an institution is highly ranked because of its age, history, wealth and perpetuated myths, it is also generally considered to have the best qualifications and to be the best institution from which to graduate. Much of the support for the high informal ranking of these kinds of institutions comes from their alumni, who in turn are frequently key influencers of the next generation intending students, and the employers of recent graduates. This perception endures even if the quality of education and the student experience are, in practice, less than satisfactory. In other words students will accept a poor quality education experience in return for a highly regarded qualification. No formal research has been done to substantiate this effect, and it cannot therefore be considered as a proposition. However, if this attitude does in fact prevail amongst intending higher education students, this makes it extremely difficult for newer institutions, particularly those wishing to be distinctive and offer a kind of education different to that provided by a competing highly ranked institution, to gain credibility and status in their own right. There is an understandable temptation to conform wherever possible to the norms that the traditional institution has established and which are expected and accepted by consumers.

Once a ranking system has become established for the institutions of a higher education system, there is an inevitable tendency for those ranked towards the bottom of the list to seek to raise their standing by copying the successful activities of those institutions higher on the list. This mimetic isomorphism (Marginson and Considine, 2000) is pursued by the institution voluntarily, and as a result promotes institutional convergence. This isomorphism is, of course, accentuated if there is also a direct financial advantage to a higher ranking, as was outlined in the earlier section on funding.

Overall, therefore, there are two propositions which could be established relating institutional ranking to systemic diversity:

11. Whether or not institutional diversity occurs within a higher education system, there will be a hierarchy of institutions and institutional types based on longevity, wealth and prestige.
12. Where institutional ranking is well established within a higher education system, there is a greater potential for institutional convergence.

Summary

The conditions under which diversity or convergence will occur, based on the 12 propositions on diversity in higher education and the factors which influence them, are summarised in Table 1. They suggest that a higher education system will not develop in a predictable way unless deliberate steps are taken to co-ordinate the system and the institutions within it.

Table 1. **Summary of the influence of different factors on systemic diversity**

Factor	Diversity promoted by	Convergence promoted by
The environment	• Environmental heterogeneity.	• Environmental homogeneity.
Policy intervention	• High level of intervention to promote diversity. • Highly regulated binary systems	• Deregulation. • Unitary systems.
Funding	• Specific financial incentives to promote diversity.	• Financial incentives targeted to other outcomes.
Competition and co-operation	• Competition in periods of low demand and economic stringency.	• Competition in periods of high demand and economic prosperity. • Co-operation.
Ranking		• Mimetic isomorphism of lowly ranked institutions.

According to Meek (2001, p .2), "in examining modes of co-ordination, it is the dynamics and complexities of the interrelationship between higher education policy and the structure of higher education systems which is at issue." He offers the concept of a continuum of relationships between government policy and institutional autonomy. "Bottom-up" systems, in which government policy lags behind and reflects institutional leadership, mark one end of this continuum. "Top-down" systems, which are dominated by strong central government policy controlling largely responsive institutions, mark the other.

The concept of a continuum suggests some sort of inverse relationship between government leadership and institutional autonomy. As one increases, so the other decreases. Policy is generated either way, and either leads or follows institutional development. This may well be the case, but there is nowhere on this continuum for a situation in which policy neither leads nor follows institutional development because it is quite ineffective or simply does not exist. Higher education systems in which this condition prevails are commonly referred to as "deregulated" or "self-regulated" systems in which it could be argued that the only concrete government policy guiding their development is one of abdication; in other words, a policy not to have much policy.

The ideological driver for such a policy vacuum has been a belief that a competitive market environment will minimise the need for specific centralised policy development beyond a general policy framework, and that competition is

a sufficient condition to promote institutional quality and differentiation. This condition has prevailed in many western countries over the last 10 to 15 years, and has been particularly evident in Australia and New Zealand higher education.

However, there is little evidence to support such a contention. The 12 propositions on diversity in higher education proposed in this paper in fact suggest that this does not occur. Rather they indicate that in the majority of circumstances, the convergent tendencies of institutions will predominate unless specific environmental and economic conditions prevail, and/or specific directed policy is implemented.

Discussion

The 12 propositions on diversity put forwards in this paper have been developed to encourage further research and to inform practice. They are intended to throw some further light on the conditions necessary to support either a homogeneous or diversified higher education system. In that sense they are presented from a policy perspective. This means they deal with broad issues of institutional difference – at the generic level – rather than the detail associated with specific variation within a particular institutional type. The notion of stakeholder perspective is not one that has attracted much interest from researchers. Indeed, if there was a prevailing perspective from which most research into diversity was conducted it would be from the perspective of the researcher, in other words, it is curiosity driven. Diversity and the broader concept of co-ordination in higher education systems, from the perspective of specific stakeholders or beneficiaries, such as students, are worth further investigation.

The evidence supporting each proposition or group of propositions is persuasive without necessarily being conclusive. Further research, perhaps seeking to establish appropriate variables that could withstand measurement over time, would help to substantiate the durability of the propositions. However, if the outcome is to inform practice, it would remain important to define the stakeholder perspective from which the notion of diversity was being examined.

Several specific avenues for further research have been identified in this paper. Firstly there is the relationship between institutional diversity and the competitive market environment. Much has been written on this topic by a number of people, particularly in relation to Australian higher education over the last ten years, and the prevailing view is that competitive market conditions promote convergent behaviour amongst institutions. This has been based on observations of institutional behaviour during times of economic buoyancy, although this condition has not been emphasised by researchers. In other words, where a government has deliberately deregulated and given institutions greater autonomy to respond to a competitive market place, this has occurred at

a time of high demand and a growing market. In Australia and New Zealand, this condition has now changed, and institutions in both countries find themselves competing in a deregulated market in which demand is falling and in which funding is inadequate. The opportunity therefore exists to investigate the behaviour of institutions in this new environment and to verify proposition 9, namely that during periods of low student demand and limited resources in a deregulated competitive market, the potential for systemic diversity increases.

Secondly, little research has been done on the impact of co-operation on institutional diversity. Proposition 10 suggests that the greater the co-operative activity between institutions within a higher education system, the greater the potential for institutional convergence. While this might seem a logical conclusion to draw, there has been little if any research on the relationship between institutional co-operation and diversification. This is particularly interesting given the frequently stated desire of the current New Zealand government to promote a differentiated higher education system on the one hand, and to discourage competition and encourage co-operation on the other. The unique set of policy conditions required to achieve this end is potentially complex and worthy of research.

Thirdly, in relation to the impact of ranking on diversity, there is scope for innovative research on the relationship between consumer enrolment preference based on self-perpetuating perceptions of institutional prestige and tradition, and the actual performance of an institution. This is an aspect of a student perspective on diversity and institutional difference associated with choice. It is particularly relevant given the transformative impact of information technology on higher education and the raft of new kinds of global institution, and older institutions offering new kinds of global education, that are having a profound impact on institutional differentiation and student choice.

Finally, returning to the more general issue of co-ordination in higher education systems, there would appear to be a dearth of research on the impact of global education initiatives on the whole concept of a national higher education system and the ability of a government to exercise control over it. The rapid increase in international consortia such as Universitas 21 and the Global University Alliance, and the internationalisation of the programmes of prestigious universities such as Harvard and MIT[3] are effectively breaking down the established understanding of a national higher education system. The impact of this globalisation of education on higher education policy in small countries such as New Zealand, and on its small (by world standards) higher education institutions is likely to be profound.

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Notes

1. Unitec has been seeking to achieve university redesignation since 1995 in the face of active opposition from the existing traditional universities in New Zealand.
2. The picture in Auckland is distinctly different. Here, in a city of over one million, there are now three universities, two of which are closer to the traditional university model, and one which is clearly a university of technology. There are also two polytechnics, one of which is similar to other large urban polytechnics in New Zealand, and another (Unitec) which has all the characteristics of a university of technology, but has not yet been granted the university name.
3. MIT has recently announced that all of its curricula will be freely available to anyone in the world via the Web. However, MIT will continue to require enrolment (and the payment of substantial fees) for students requiring examination and certification.

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Revenue Generation and Organisational Change in Higher Education: Insights from Canada

by
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This paper reports on a study of four major Canadian universities' strategies for generating revenue in the face of prolonged cutbacks. The universities are placed on a continuum of higher education funding, institutional types and organisational attributes. The study produced new hypotheses about how universities' organisational attributes change as a result of the need to generate revenue.

How do universities respond to changes in the way their activities are financed? What happens to institutions that depend on public funding when such funding is reduced? This paper presents hypotheses arising from recent research into the revenue generation strategies of four major Canadian universities. The late 20th century witnessed a decrease in public funding for higher education, relative to private funding, in most parts of the world. In Canada, public funding for higher education declined, not only in relative, but also in absolute, terms (World Bank, 2002). By 1999, the proportion of public to private expenditure on tertiary education was 59:41 in Canada, compared to an OECD mean of 79:21 and to ratios of 52:48 in Australia, 63:37 in the United Kingdom and 47:53 in the United States (UNESCO, 2002). Canada being a federation in which provinces have responsibility for higher education, the financing and regulation of the country's universities exhibit considerable diversity. In the pages that follow, the four universities studied are placed on a continuum of higher education funding, institutional types and organisational attributes. At one end of the continuum are public institutions that receive all or almost all their funding from government; at the other end, for-profit institutions, which derive their revenue from fees. In the middle are located public and private not-for-profit institutions sustained by a combination of government funding, fees and donations. Existing literature suggests that important organisational attributes (including mission, economic logic, resource allocation practices and hierarchy) change with location on the continuum. The findings of the case study were largely consistent with the suggested relationships. The study produced several new hypotheses about how universities change as a result of the need to generate revenue. One is that teaching and research are bifurcated as universities move from the public realm toward the market.

Types of higher education institution

At the crudest level, one can envision institutions of higher education as located on a continuum, at one end of which they receive the great bulk of their funding from governments; at the other end of which, their revenue consists entirely or almost entirely of tuition and other fees.

Neat classification of institutions (defined here as degree-granting institutions) is not possible. In global higher education, diversity abounds. Even whether a not-for-profit institution is public or private depends on

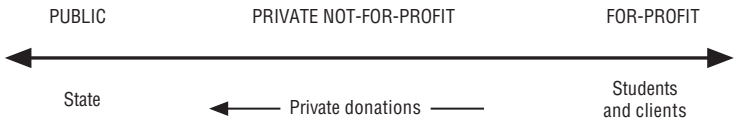
numerous factors (*e.g.* legal status, control, finance, common usage), which may or may not accord (Levy, 1986a). One can nevertheless distinguish broadly, based on legal status and governance, between three basic types of institution: public universities, private not-for-profit universities and private for-profit providers. The latter are sometimes referred to as "for-profit universities", but their missions and structures differ so greatly from those of universities as to render that term a misnomer.

The three basic institutional types in turn comprise other categories. A "public university", for example, may be of the traditional continental European variety (*i.e.* under the jurisdiction of a ministry of education which controls budgets and appointments of faculty members, who are civil servants). Or, it may be governed by a board, which owns assets and employs staff, and to which government makes appointments. Private not-for-profit universities may be church-sponsored or have charitable foundation status (Williams, 1996). Similarly, the for-profit category comprises both proprietary colleges and publicly-traded companies.

The three basic types of higher education institution tend to differ in the proportions of their revenue they receive from government, on one hand, and students and private clients, on the other. Although exceptions have been found (see, for example, Levy, 1986a), in general, public universities receive more of their revenue from governments than private not-for-profit universities, which tend to rely principally on tuition fees to sustain themselves (Geiger, 1991). The latter in turn receive more from government than for-profit providers. In the United States, for example, in which all three types of institution are well-represented, the proportions of institutional revenue derived from governments (local, state and federal) were 51% for public universities and colleges, 17% for private not-for-profit institutions and 0% for for-profit providers in 1995. The proportions derived from tuition and fees were 18% for public institutions, 42% for private not-for-profits and 95% for for-profits (Ruch, 2001, p. 97).

The different relationships to government and society of different types of institution are also reflected in their tax status. Public and private not-for-profit universities are generally exempt from most forms of taxation, whereas for-profit providers are not (Ruch, 2001). Indeed, church support and/or private donations have traditionally been important sources of revenue for private not-for-profit universities in many countries (Geiger, 2001). Recently, public institutions in some jurisdictions have begun to seek private donations. The capacity of for-profits to attract such funding is questionable. Although Tooley (2001) reported a few instances around the world in which for-profits received donations from alumni, Ruch (2001) found that private contributions were not a source of revenue for such institutions in the United States.

Figure 1. **The relationship between institutional type and revenue sources**



In addition to differing in their sources of funding and tax status, the three basic types of institution differ in other fundamental respects. The typical mission of a not-for-profit university, public or private, is to advance and disseminate knowledge through education, research and service. In contrast, for-profits are businesses. Particularly for the publicly-traded company, educating students is not an end in itself, but a way of making money.

The economic logic of for-profit education differs fundamentally from that of not-for-profit education, public and private, as Winston has pointed out (1999). In the not-for-profit sector, prices (*i.e.* fees) are lower than costs, *i.e.* students are subsidised. Indeed, price did not exist in the traditional ministry-controlled public higher education sector. Although many countries with such sectors have begun to impose tuition fees (World Bank, 2002, p. 71), students in some OECD and developing countries continue to enjoy "free" higher education today.

Although the differences between public and private not-for-profit institutions are much less clear and blunt than those between the not-for-profit and for-profit organisations (World Bank, 2000, p. 29), they are discernable. Levy (1986b) suggested that the goals of private not-for-profit universities are more focused than those of their public counterparts and that their governance and administration are invested with greater authority. Geiger (1991) reached similar conclusions about the relative specificity of their goals. For-profit institutions have even narrower goals and more explicit hierarchies than their not-for-profit counterparts. According to Ruch, for-profits have "highly focused missions, targeted to specific market segments [and] particular industries, and limited to specific fields of study. Unlike most public universities, they are very clear about what they will not do" (2001, p. 25). Whereas hierarchy tends to be blurred in universities – presidents, deans, chairs and other academic administrators relating in a collegial manner to fellow faculty members – "[i]n the for-profits, your boss is clearly not your colleague but your superior, and you are his or her employee, subordinate in rank, authority, responsibility and power" (Ruch, 2001, p. 15). Governance and management are corporate in nature, with managers being held to account for outcomes.

The corollary of the apparent increase in managerial authority from public to private not-for-profit to for-profit institutions is a decrease in the

power of the faculty. The traditional continental European ministry-controlled university featured a weak rector surrounded by "congregations of powerful professors" (Clark, 1998, p. 134). At the other end of the spectrum, faculty members in the for-profit sector have limited power, lacking tenure and control over the curriculum. "In a real sense, faculty in the for-profits are viewed by the business side as being delivery people, as in delivery of the curriculum" (Ruch, 2001, p. 115).

Institutional responsiveness to students, like managerial authority, appears to grow across the continuum as students substitute for the state as sources of revenue. Slaughter and Leslie concluded from their study of higher education in Australia, Canada, the United Kingdom and the United States in the late 1980s and 1990s that, as "the significance of tuition as a revenue source has increased …, student power to affect university decision making has grown, although student power remains relatively limited in most settings" (1997, p. 237). In the for-profit sector, students are not only treated with respect, student demand drives what is offered. For-profit institutions invest a great deal of effort in making sure that their students succeed in their studies and in finding employment. This is reflected in high levels of expenditure on counselling and career placement. There are indications that for-profit institutions in the United States may outperform not-for-profit ones in enabling students from minority groups to succeed academically (Ruch, 2001, p. 31).

Specificity of goals, hierarchy, faculty power and responsiveness to students are not the only organisational attributes that appear to vary with institutional type and the mix of institutional revenue. Resource allocation practices also appear to change as institutions depend for revenue less on the state and more on the market. At one extreme, many of the expenditures (*e.g.* salaries) of traditional European ministry-controlled institutions came out of the ministry's budget (Clark, 1983) and were budgeted by line. As non-government revenues become more and more important, block budgeting (in which the centre allocates general funds to units in blocks and units are responsible for balancing their budgets), modified block budgeting (in which block grants are supplemented by specific revenue-sharing arrangements) and responsibility centre budgeting (RCB) seem to become increasingly prevalent. Under RCB (also known as revenue responsibility budgeting in North America and break-even cost centre budgeting in the United Kingdom), the centre allocates revenue lines, instead of expenditure lines, to units and the latter are required to generate revenue sufficient to cover all their direct and indirect costs and any "taxes" to permit cross-subsidisation. As Massy has observed, this system "extends the sensitivity to market forces down through the institution" (1996, p. 455). Resource allocation in for-profit institutions is

even more responsive to market forces; as in other businesses, resources are allocated to those activities that promise the best financial return.

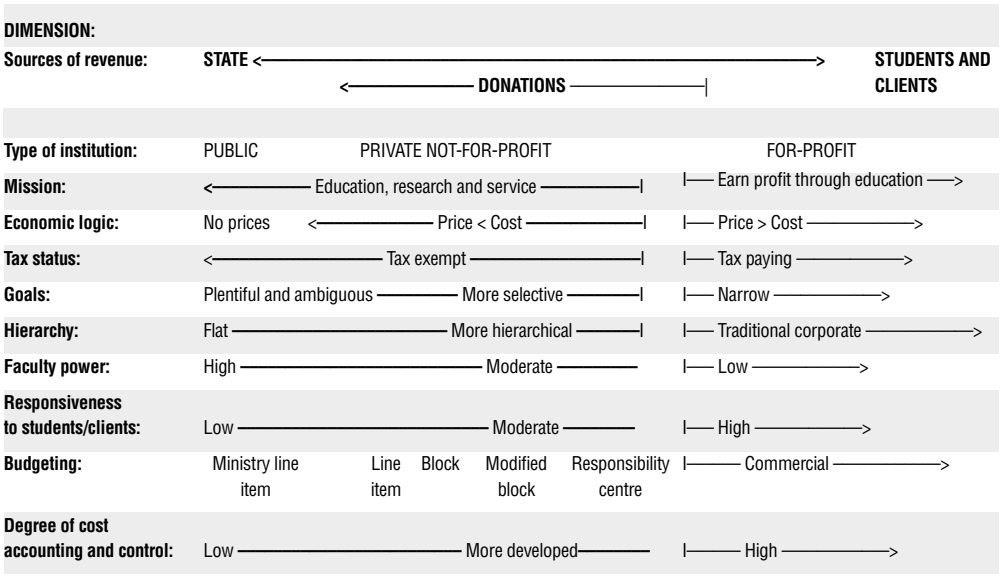
Fundamental differences are also apparent in the capacity of different types of institution to control costs. Not-for-profit universities are notorious for their limitless ambitions, their tendency to add new activities onto existing ones (rather than to cease doing some things), and their consequent inability to control costs. Howard Bowen's revenue theory of costs in higher education (that costs are a function of revenue, because universities raise all they can and spend all they raise) pertains to not-for-profits. Universities' tendency to keep adding on is deeply rooted in shared governance, tenure, academic freedom and assumptions that flow from these about "property rights" (Massy, 1996) (*i.e.* the assumption that a programme or activity, once initiated, has a "right" to continue). Public universities appear to be more prone to this tendency than private not-for-profits – the latter being more selective in their goals and commitments (*e.g.* Levy, 1986a, 1986b; Geiger, 1991). For their part, for-profits are focused, quick to move out of unprofitable activities, and rigorous in cost accounting and control (Ruch, 2001; Tooley, 2001).

A final respect in which not-for-profit and for-profit institutions differ is in their accounting practices. Not-for-profit universities in many jurisdictions practice fund accounting, the essential purpose of which is to show the extent to which management has complied with the wishes of the government, external donors and the board (Herzlinger and Sherman, 1980). For-profit institutions, in contrast, follow commercial accounting practices (Ruch, 2001), which focus on financial performance rather than stewardship.

Where do all these observations, drawn from the existing literature, leave us? They suggest that the characteristics of higher education institutions change in accordance with their relative dependence on government funding and fee revenue. The ways in which they do so are summarised in Figure 2 below.

It appears that some attributes change gradually across the continuum, whereas others change abruptly, with differences in institutional type. Amongst the latter attributes are economic logic, mission, legal status and accounting practice. Thus, for example, those aspects of a private not-for-profit college would change abruptly if it were bought by a higher education company. The attributes that may change more gradually include goal specificity, administrative hierarchy and faculty power – as well as attentiveness to market demand, client satisfaction and costs. It appears that, as institutions move away from the state toward the market, their goals become narrower, their administrative hierarchies become more pronounced and the power of their faculty diminishes. It also seems that they tie resource allocation more closely to market demand, pay more attention to student satisfaction, and more actively account for and control costs.

Figure 2. **Higher education funding, institutional types and organisational attributes**



It should be noted that this continuum describes institutions of higher *education*. A big difference between not-for-profit universities, public and private, and for-profits is that the latter eschew research (other than curriculum- or instructional technology-related research and development). That in part explains for-profits' capacity to keep costs below prices, even though they compete with institutions that are subsidised by governments and/or private sources and that in turn subsidise their students' education (Ortmann, 2001). The absence of research from their missions also explains why for-profits are able to manage their faculty and their costs tightly, dispensing with the less orderly, more expensive arrangements typical of creative organisations, including universities; the for-profit's faculty member is a delivery person, rather than a creator. As such, he or she requires relatively little autonomy. Research-intensive universities have traditionally favoured creativity and innovation over co-ordination and focus to an extreme degree. The organised anarchy and the garbage can model are ideally suited to the curiosity-driven quest for knowledge. But such extreme favouring of creativity and innovation over co-ordination and order is possible only in an organisation that does not need to meet clients' needs in order to survive. Serving clients requires co-ordination and focus, which is why management hierarchy and controls tend to increase across the continuum, with proximity to the market.

Trends in the population of higher education institutions

If one were to plot the world's higher education institutions on the continuum, where would they be concentrated? Traditionally, the great majority of universities have been not-for-profit (Levy, 1986a). For-profit institutions tended to fulfill functions that could be readily evaluated by consumers (*e.g.* provide vocational education, short courses, exam preparation). They also flourished more broadly in jurisdictions in which the demand for education greatly exceeded the supply (Geiger, 1991).

The parts of the continuum on which institutions were concentrated naturally varied from country to country. In the United States, known for the diversity of its institutions of higher education, well-developed public and private not-for-profit sectors emerged late in the 1800s. In contrast, former Communist countries and other jurisdictions had state higher education monopolies late into the 20th century (Geiger, 1991). Jurisdictions also differed in the nature of the institutions in the same sector. A public university in the United States, for example, is governed and funded differently than one in the United Kingdom.

In the latter part of the 20th century, the distribution of the world's higher education institutions across the continuum changed as a result of two forces. One was growth in the numbers of private not-for-profit and for-profit institutions, relative to public ones. The principal reason for this was the inability of governments, particularly in the developing world, to provide sufficient funding to public institutions in order to meet rising demand for higher education. Most developing countries never had publicly-funded systems of mass higher education. State institutions typically served a very small fraction of the population. The cost of expanding these institutions to meet demand from rapidly-growing citizenries vastly outstripped governments' ability to pay. As a result, private institutions emerged to meet the need. Latin America, Asia, and, more recently, Eastern Europe and Sub-Saharan Africa have experienced rapid growth in private provision (both not-for-profit, often sponsored by religious or philanthropic organisations, and for-profit) (World Bank, 2002). Growth of private higher education is expected to continue, facilitated by loosening of regulations, in order to meet excess demand (World Bank, 2000).

The growth of private institutions has been much less evident in most OECD countries than in the developing world (World Bank, 2002). Recent years have, however, witnessed growth in for-profit provision of higher education in the United States. In 1996, approximately 15% of all two- and four-year institutions in the United States were for-profit. They accounted for approximately 2.1% of total enrolment and for about 5% of total full-time faculty in the country (Ruch, 2001, p. 4).

A second reason for change in the distribution of higher education institutions along the continuum was reduced government funding to public and private not-for-profit institutions, which appeared to propel such institutions toward the market. It should be noted that increases in institutional responsiveness to student demand resulted, not only from decreases in the level of government funding relative to fee revenue, but also from changes in the mechanisms through which such funding was provided. For example, governments which ceased funding institutions on a historical/incremental basis and instead adopted enrolment-driven funding formulas or voucher arrangements reinforced market signals, even if the level of funding they provided remained constant. Decisions by governments to increase student assistance at the expense of university operating funding likewise had the effect of giving additional weight to student demand.

The literature provides many examples of public universities assuming characteristics traditionally associated with more market-driven institutions. Increases in the power of administrators relative to collegial bodies; proliferation of institutes and other structures, capable of more timely response to market demand than traditional academic departments; rigorous financial planning and reporting; new emphasis on cost accounting; increasingly sophisticated approaches to pricing; and the launching of for-profit arms by not-for-profit universities are amongst the developments reported in Australia, Europe, the United Kingdom and the United States.

In his famous 1998 book, Clark identified characteristics common to five European universities that had transformed themselves so as to be academically and institutionally successful: "a strengthened steering core; an expanded developmental periphery; a diversified funding base; a stimulated academic heartland; and an integrated entrepreneurial culture" (1998, p. 5). These universities had developed the capacity to generate second (other government) stream income and third (non-government) stream income and used such income to fund institutional priorities and initiatives. Their steering cores were empowered relative to the central leadership traditional in continental Europe and the United Kingdom, but were nevertheless closely connected to the academic heartland of their institutions. "Stronger line authority also appeared ... Individuals and groups were held accountable" (Clark, 1998, p. 137). Crucially, their strengthened steering cores enabled them to cope with societal demands that far outstrip available resources by focusing and becoming selective. The "focused university" described by Clark is conscious of – and makes choices in light of – its distinctive mission. Insofar as the universities studied by Clark exhibited some of the attributes of private not-for-profit universities (more developed hierarchy; greater institutional focus and selectivity; diversified revenue), it is arguable that they were successful precisely because, consciously or not, they had adopted features of

institutions well-adapted to the new resource environments in which they found themselves.

The research into the revenue generation strategies of Canadian universities described herein thus took place in a world in which private funding for – and private not-for-profit and for-profit provision of – higher education were increasing relative to public funding and provision and in which universities and colleges that had traditionally looked to governments for funding appeared to be becoming more market-oriented.

The Canadian case

Where would Canada's universities be located on the continuum sketched out above? Canadian universities are not-for-profit corporations, established by acts of provincial legislatures. Some were founded by colonial or (after 1867) provincial governments; others, sponsored by churches or private benefactors (Lang, 2001). As independent corporations, they typically have the capacity to enter into contracts, own assets, determine employment arrangements, allocate funds internally and so on. In addition to independent legal status, Canadian universities enjoy substantial practical autonomy. Canada is a federal state in which provinces have jurisdiction over education, so the extent to which universities are regulated varies by province. In general, however, the country's universities have been and remain relatively free from government control (Cameron, 2002).

Consistent with trends throughout the developed world, generous government funding in the 1960s and early 1970s fuelled massive university expansion. During this period, universities became dependent on provincial operating funding. Such funding was subsequently reduced per student, forcing them to seek additional revenue from fees and other sources. The particulars varied from province to province, but, overall, operating funding per student fell from approximately CAD 11 500 per student in 1977 to CAD 7 000 per student in 1997 in constant 1992 dollars (AUCC, 1999, cited in Lang, 2001, p. 21). The share of total operating income derived from fees rose as operating funding from government fell. Government grants and contracts decreased as a percentage of universities' operating income from 79% in 1990/91 to 60% in 2001/02, while fees increased from 18% to 33% and other income (including donations, bequests, non-government grants and investment, and miscellaneous income) increased from 3% to 8% of operating income (CAUBO, Annual). To put this in context, the proportion of public to private expenditure on tertiary education in 1999 was 59%/41% in Canada, 52%/48% in Australia, 63%/37% in the United Kingdom, 47/53% in the United States – the OECD mean being 79/21% (UNESCO, 2002).

The extent of the reductions varied by province, as did the extent to which provincial governments constrained the universities in what they could do to generate revenue. By 2001/02, government grants and contracts varied as a percentage of general operating income from a high of 69% in British Columbia to a low of 47% in Nova Scotia; fees comprised between 25% (in British Columbia) to 44% (in Ontario) of such income. The universities featured in the research reported here – located in different provinces – thus had differing levels of need and different opportunities to generate non-government revenue, as well as different histories, aspirations, planning processes and strategies.

The research and its findings

A theory-building comparative case study approach, as elaborated by Eisenhardt (1989), was employed to investigate four major universities' institutional and faculty-level revenue generation strategies. Conducted between 2002 and 2004, the research involved semi-structured interviews with university leaders and deans, analysis of financial data, and extensive archival research. The four universities – the University of British Columbia, the University of Saskatchewan, the University of Toronto and Dalhousie University – all offer programmes from the undergraduate to the doctoral level in a wide range of disciplinary departments and professional schools, including medicine and dentistry, and are actively engaged in research. The University of Toronto, Canada's largest university, is located in the country's largest city and most populous province. The University of British Columbia is also amongst Canada's largest universities and located in a major, multicultural metropolitan centre. Both are among the country's most research-intensive universities. The University of Saskatchewan and Dalhousie University are much smaller institutions, located in much smaller cities in less populous provinces.

The four universities examined are all "public" Canadian universities – or, more accurately, not-for-profit corporations, established by acts of provincial legislatures, in receipt of provincial operating and federal research funding. They thus occupied a relatively narrow segment of the continuum of higher education funding mix and institutional types sketched out above. Nevertheless, owing to differences in their sources of funding and relationships to government over time, their locations on the continuum were not identical. In terms of mission, control and funding, some were more public, others more private. Indeed, their positions on the continuum appeared to reflect the settlement of what is now Canada by Europeans from east to west. The two eastern universities – Dalhousie University and the University of Toronto – had been founded early in the 1800s, before the distinction between public and private (religious) higher education was firmly drawn in

British North America. In contrast, the University of Saskatchewan and the University of British Columbia were established in the early 1900s by the governments of their respective provinces as provincial (state) universities.

As Marginson and Rhoades (2002) have observed, comparative research in higher education tends to focus on national systems – to the neglect of global, regional, and local agencies and forces. Examining the historic missions, control and finance of these four Canadian universities revealed that – at least in a federal country in which higher education is a provincial responsibility – considerable variety amongst universities is possible, reflected in quite different locations on the continuum of funding mix and institutional type. Dalhousie University appeared to be closer than the others to the private not-for-profit realm, followed in turn by the University of Toronto, the University of British Columbia and the University of Saskatchewan – the provincial universities, and in the latter two cases, for many years, the only universities in their provinces.

The activities identified by officials at one or more universities or faculties as current or potential future sources of revenue are listed in Table 1 below. Some elements were common to all four universities' strategies – notably, increasing domestic tuition fees, private fundraising and lobbying governments – but the universities' approaches to revenue generation also differed in important respects. For example: one university alone pursued domestic enrolment growth for financial reasons; another was unique in seeking to generate net revenue by serving international markets for undergraduate and professional education. Some differences in strategy were rooted in differences in provincial policy. Others appeared to reflect factors such as institutional history and culture, administrative philosophy, and leadership.

Most, but not all, of the activities cited as elements of universities' revenue generation strategies (*e.g.* increasing domestic tuition fees, fundraising) also featured in faculties' strategies. Those activities that did not tended to be ones that could only be pursued centrally (*e.g.* land development, ancillary operations, exclusive marketing partnerships). Faculties' strategies also included a number of activities (*e.g.* continuing education, technology transfer) that generated net revenue for one or more of their number but that were revenue-neutral or entailed net costs for their universities. Faculties' strategies appeared to be shaped by field, institutional policy, decanal leadership and faculty size, as well as by the prevailing conception of higher education as a public or a private good.

Did the four universities exhibit the attributes that one would expect, based on their respective locations on the continuum and on the extent to which the public/private mix of their funding had changed over the previous decade? It was suggested earlier, based on the literature, that organisational

Table 1. **Elements of university (U) and faculty (F) revenue generation strategies**

1. Increasing tuition fees for Canadian students (U/F)
2. Increasing enrolments of Canadian students in degree programmes (U/F)
3. Educating out-of-province Canadian students at fees approaching or above costs (U/F)
4. Educating international students at fees approaching or above costs (U/F)
5. Creating full cost recovery or premium fee programmes (U/F)
6. Distance education (U/F)
7. Programmes abroad (F)
8. Continuing education (F)
9. Sale of copyright material (U/F)
10. Support of faculty members in obtaining research grants/contracts/chairs (F)
11. Technology transfer (F)
12. Partnerships (F)
13. Fee-for-service activity by academic units (U/F)
14. Private fundraising (U/F)
15. Lobbying the university (F)
16. Lobbying governments (U/F)
17. Land development (U)
18. Ancillaries (U)
19. Exclusive marketing contracts (U)

Note: "U" denotes an activity identified by one or more universities as a current or planned future source of additional revenue; "F" denotes an activity identified by one or more faculties.

attributes change with institutional type and location on the continuum. These attributes include mission, tax status, economic logic, goal specificity, hierarchy, faculty power, responsiveness to students and clients, resource allocation, cost accounting and control, and type of accounting. It was hypothesised that, as public funding is reduced, universities move along the continuum in order to sustain themselves; in the process, their characteristics change. Were the findings from this research consistent with the hypothesised continuum? What, if anything, did they add?

Aspirations and missions

The four universities' aspirations were the same in that they involved moving up – or keeping up – in a reputational hierarchy of universities; they differed in accordance with the universities' existing positions in the hierarchy and with whom they sought to compete. The University of Toronto sought to be among the top public research universities in the world. The University of British Columbia aspired "to be Canada's best university" (University of British Columbia, 1998). In contrast, the realms within which the University of Saskatchewan and Dalhousie University sought to compete were domestic; they aimed to be competitive with other major Canadian "research universities". Do such aspirations correspond with what one would expect of universities on

the part of the continuum occupied by these four? Absolutely! As Winston and many other authors have noted, not-for-profit universities and colleges typically seek to move up in the reputational hierarchy, to emulate top institutions, to be "Harvard-in-the-small" (Winston, 1999, p. 10). For-profit institutions have a different motivation. A fundamental distinction between not-for-profit universities and colleges (public and private) and for-profit outfits is that the former are motivated by the desire for prestige, whereas the latter are motivated by the desire for profit (Ruch, 2001).

Economic logic

Reference was made earlier to Winston's observation that the economic logic of not-for-profit higher education differs fundamentally from that of for-profit higher education; whereas price necessarily exceeds cost in the latter sector, cost exceeds price in the former – *i.e.* students' education is subsidised by public and private funding. This research suggested that the economic logic of higher education changes in stages across the not-for-profit segment of the continuum. Specifically, it suggested that there is a stage in which universities and faculties set prices at or above cost for activities they deem to be peripheral to their missions (*e.g.* continuing education, international (or out-of-province) student education, contract research, fee-for-service activity), while continuing to subsidise activities they deem to be central (*e.g.* degree education, curiosity-driven research). To the extent that they cross-subsidise, they are supporting institutional and academic priorities by means of market activity.

For example, whereas all four universities had increased fees for undergraduate and/or professional programmes in recent years (to the extent permitted by provincial regulation), at least three were simultaneously increasing the extent to which they subsidised (doctoral-stream) graduate education (*i.e.* were increasing the ratio of operating funding to fee revenue and other private funding). Another commonality in the universities' subsidisation practices was that they all subsidised grant-funded research, because Canadian governments were not funding fully the indirect and overhead costs involved. An official responsible for research and technology transfer at one of the universities commented:

> "In our budget model, there isn't any expectation [laughter] that we're going to get any net revenues out of this thing. We can always be hopeful, every once and a while, but, by and large, there is no strategy for making a profit, if you like, on research. It is still very much of a scramble to find some way of paying the bills."

Contrary to that which most of the literature on "academic capitalism" suggests, the universities did not do research in order to obtain revenue; they scrambled to secure revenue in order to fund research.

Interviews and other information obtained in the course of this research suggested that, for universities of the type studied here, being "competitive" does not mean offering educational programmes of equal or better quality than other universities, or being more successful in attracting undergraduate students than one's competitors, as much as it does being as good or better in research. This, in turn, requires competitiveness in the academic labour market. Asked what drove his university's need for revenue to support research, the interviewee quoted above said:

> "Competition. The university wants to be a major research university. If it's going to do that, it has to attract and retain good researchers. And if it's going to do that, it's got to provide them with the facilities and opportunities to do the kind of work they want to do at the level they want to do it or they're going to go elsewhere."

Just as the four universities studied here competed with others to attract faculty members, they competed to subsidise graduate students, who would contribute to their research activities and reputation, and help them move up in the university hierarchy. In this respect, it appears that the behaviour of these Canadian universities differs from that of universities in the United Kingdom, where the nature and pricing of graduate programmes have become more market oriented (Shattock, 2003).

Whereas Winston's argument concerning subsidy, hierarchy and peers suggests that universities compete to subsidise those factors (*e.g.* top faculty, top students, research) that enable them to move up in the reputational hierarchy, this research also found differences in subsidisation practices. It appeared that the universities subsidised things they deemed to be part of their missions. Thus, the University of Saskatchewan subsidised its college of extension, because it was part of the university's tradition of service to the people of that province. It also subsidised the education of dentistry students from Saskatchewan (mission), in part with revenue generated by educating out-of-province students (non-mission), and was considering extending this practice to other professional programmes. The University of British Columbia perceived its mission differently. It subsidised the education of all Canadian undergraduates (mission) with operating funds, while covering all costs or generating net revenue from international undergraduate students. Thus, universities can perceive the same thing (*e.g.* an out-of-province student) as meriting subsidy or as an opportunity for revenue generation, depending on their understanding of their missions.

One particular instance of cross-subsidy involved subsidisation of investigator-driven research by client-driven research. As one university official put it, the fewer strings attached (to a research project), the less overhead was charged. He explained:

> "[Universities] need to be ever vigilant about the need to do purely curiosity-oriented research ... Even tri-council funding tends to be, these days, tied to an outcome that's going to generate some economic benefit ... Is it something that should really be [ringing alarm bells]? No. But I think it's something we should be raising caution flags about. And making sure that [we adequately fund] the public good type of research and purely curiosity-driven research ... You need a good balance. Now we've tried to do that. We make sure that some of what we get for applied purposes [supports curiosity-driven research]. And that goes on all the way from the individual researcher to the whole institution."

Of course, universities' perceptions of what comprises their missions are not static. What they perceive as deserving of subsidy changes over time. One of the processes that appears to take place in publicly-funded universities, to which government funding has been reduced, is dialogue about the relationship to the institutional mission – and associated financial status – of programmes and activities. Is an international student an object of subsidy or a potential source of net revenue? Is technology transfer an aspect of the university's mission deserving of operating budget support or an activity that should be required to recoup its costs? It is probable that this phenomenon – of universities generating revenue by means of non-mission activities in order to subsidise activities they deem to be part of their missions – is characteristic of institutions on this part of the continuum of higher education funding mix and organisational attributes.

Resource allocation

This research also lent qualified support to the suggestion advanced at the outset that universities decentralise resource allocation as the mix of funding shifts; three of the four universities had responded to the need to generate additional non-government income by giving faculties access to revenue for increasing enrolments and/or acceding to increased fees and/or other income-generating activity.

It appears that, in order to generate revenue, universities must give faculties incentives to recruit international students, offer continuing education, increase enrolments, raise private funds or engage in other desired behaviours. This means sharing revenue with faculties on a predictable basis. It also means providing some assurance that success in generating revenue will not be rewarded with budget cuts. In other words, it means limiting the extent to which institutional decisions and priorities, implicit or explicit, affect resource allocation.

Pressure for further budgetary decentralisation was evident at the four universities. It seemed that charging students in professional programmes

tuition and other fees that approximate costs created particular pressure to move toward responsibility centre budgeting.

Officials at Dalhousie University, the most decentralised of the universities in financial terms, observed that its practice of across-the-board cuts, coupled with the knowledge that faculties could earn revenue in a relatively predictable manner, had empowered the latter. One interviewee explained that if "faculties can put together a programme that makes sense to them and that makes sense financially, they basically are given a green light to do it." The result was more entrepreneurial faculties. Whereas a dean at another university described his faculty's revenue generation strategy as consisting until recently of "criticising the central administration and complaining about government grants", Dalhousie's faculties appeared to have assumed both greater control of and greater responsibility for their fates. There was a downside to this:

> "[The fact that] we've embedded … in the managerial culture of the institution a decentralised approach to things … has its prices – very much so – in the sense that when there are core needs of the institution, to get them met [is very difficult] … I think that a consequence of decentralisation and every-ship-on-its-own-bottom is that there's less sense of Dal and of being part of a university than there used to be, even when I came here … It's not like we're all one institution and we're proud of the one institution and we're all willing to pull together. [It's more a] 'I'll pull with you, if you can help me with this joint programme, and we can both make money on it' sort of thing."

Institutional responsiveness

It was hypothesised above, based on the literature, that institutional responsiveness to students and clients increases with dependence on revenues earned through the provision of tuition and other services. Interviewees offered observations and comments consistent with this suggestion. For example, a senior official said that the University of British Columbia's attitude and approach to prospective students, Canadian and international, had changed greatly as a result of its entry into the international market for higher education and the lessons it had learned about student recruitment:

> "We were an old, traditional university. People came to us; we didn't have to go after them. There was a lot of that [attitude] throughout the whole university. That's changed dramatically!"

There were indications that external responsiveness increased with dependence on private revenue at the faculty level as well. For example, one professional school, confronted with a massive base budget reduction in 1999, had begun to charge many of the students in its first professional programme

full cost recovery fees. The dean noted that students' expectations had risen with the fees they paid and that the faculty was having to change to meet them. In order to continue to attract and retain full cost fee-paying students, the school was devoting much more attention to monitoring student satisfaction and responding to their feedback than it had in the past. The dean also wished to establish a career stream for individuals who are excellent teachers but not active in research. In undertaking increasingly detailed evaluation of instruction and developing a teaching-only stream, the school was adopting some of the practices typical of for-profit higher educational organisations.

As universities become more responsive to the interests of students and clients, to what do they become less responsive? This research suggested that two phenomena are at work. One is that the scope for institutional priorities and considerations to affect resource allocation diminishes as budgets are decentralised. This assessment is consistent with what textbook strategic management suggests about the merits of decentralised corporate structures, whether described as divisionalised or as responsibility centre, profit centre or break-even centre management. Decentralisation is said to have several virtues: making the best use of local, expert knowledge about particular businesses (rather than trying to run everything from the centre); making possible timely decisions and action; providing incentives to increase revenues and reduce costs; and fostering accountability. On the other hand, it tends to increase the challenge of co-ordination and internal exchange (*e.g.* transfer prices, provision of shared activities). (For examples, see: Barney (2002); Berry, ed. (1994).

Even as the impact of institutional plans and priorities diminishes and faculties gain in autonomy, it seems that universities become, as two senior Dalhousie officials put it, less "faculty-centred". One observed that the university was "moving from … a faculty-centred university … to a more student-centred university". Similarly, the deans of science at two universities reported that, as a result of the new funding environment for research, "the areas of research the faculty engage in have become shifted towards areas that are, sort of, imposed on us by outside".

The suggestion that movement along the continuum involves a shift from internal to external focus is consistent with Shattock's observation that "the successful adoption of an earned income approach achieves much more for a university than making up a shortfall from state support because it encourages the university to be outward, rather than inward looking" (2003, p. 56). It is also consistent with Marginson and Considine's account of the transformation of Australian universities, the proportion of the total income of which derived from governments fell from 85% in 1987 to 55% in 1998 (2000, p. 57). The new "enterprise university" had "virtues of transparency and

openness, ... clarity about resource deployment, and ... greater external responsiveness", but this "seem[ed] inextricably linked to the faltering of academic identity [and] to reliance on money as the meta-measure of value" (2000, p. 14).

Other factors

The research described here provided glimpses into other factors that appear to change with the mix of funding. For example, it suggested that universities' attitudes to physical capital change with funding mix – that, as they move along the continuum, they begin to make provision for and to finance capital needs, rather than relying solely on governments.

The research also suggested that institutional awareness of risk increases over the continuum. Interviewees spoke about numerous types of risk: investment risk; vulnerability to changes in government and professional regulation; the short shelf life of niche master's programmes; and the volatility of income from executive development programmes. Insofar as the revenues associated with many forms of education, research and professional service are more volatile than those associated with traditional degree programmes, universities undertaking those activities are exposed to, and need to learn to manage, higher degrees of risk. As these universities had discovered, the capacity to identify and assess risk is an important element of contemporary higher education management (Shattock, 2003).

One respect in which the findings from this research are perhaps inconsistent with the continuum sketched out earlier is that the universities appeared to be less actively engaged in cost accounting than one might have expected, given the extent to which their funding mix had changed. Broadly speaking, however, the results of this research were consistent with the hypotheses implicit in the continuum.

Institutional and faculty continuums

The research suggested that faculties, like universities, can be conceived as arrayed along a continuum. At one end, they get all their resources from their universities in the form of line-item or block operating budgets. At the other end, they earn all their revenue by providing education, research or other services to students and clients and by capturing or sharing in the resulting revenues.

As in the case of the universities, the perceived locus of responsibility for providing resources changes across the faculty continuum – from "it's the university's responsibility" to "it's up to us". Revenue generation strategies change accordingly – from "lobbying the provost", to generating revenue from peripheral activities, to generating revenue through core activities, to

"delivering value" – in the words of one business dean, "identify the points [where] you're adding value [for employers, students and clients], where you should add value, and understand how some of that value is to be shared in order to fund your operation for delivering that value".

Faculties function within universities' legal, tax, governance and budgetary arrangements, so the continuum on which the former are located lacks these dimensions. It has other dimensions, however, reflecting the resources and activities necessary to secure resources from the university, on one hand, and students and clients, on the other. It appears from this research that the following occurs, as faculties become increasingly dependent on fees and other external revenue received for a particular service or purpose:

- The roles of deans change: deans devote more time to fundraising and external relations and require more sophisticated management skills and financial acumen.
- There is a shift in who defines what is valuable and worthy of investigation or inclusion in the curriculum. The views of academics become relatively less important and those of research sponsors, employers of graduates and students, more so.
- More attention is paid to student satisfaction. The faculties that were most dependent on fee revenue and/or had dramatically increased fees for particular programmes appeared to be attentive to student satisfaction and to respond to students' concerns.
- The pace of programme development and change appears to increase, particularly to the extent that programmes are developed to serve niche professional markets.
- Budgeting and accounting systems become more sophisticated, in order to enable faculties to budget for new and more volatile programmes and activities and to keep track of the costs and returns.
- The number of non-academic staff increases, in order to enable faculties to improve student services (*e.g.* counseling, job placement) and to market and manage their programmes and activities.
- The extent to which faculties budget for equipment renewal may increase.

In sum, the research suggested that, as faculties rely less and less on their institutions for the resources they need to run their programmes, and more and more on the results of their revenue generation efforts, they focus more on the needs and interests of their students, funders and clients, plan and budget differently, require more professional staff and expertise, and adopt different financial accounting practices.

Given that the extent to which faculties within a given university generate revenue by serving markets for education, research and service

varies according to field of study, leadership, budgetary treatment and other factors, a university's faculties will be located at different points on the faculty continuum. The distance between faculties – and between an outlying faculty or faculties and the institution itself – may be great. For example, although the University of Saskatchewan was the most public of the four universities, its dental college was extremely dependent on fee revenues, charged almost half of its students fees that approximated costs, and was beginning to introduce mechanisms for monitoring students' satisfaction similar to those employed in for-profit higher education. In this case, the school's distance from the institutional norm arose from the exceptional budgetary treatment it had received. In other cases, market opportunities and/or competitive forces particular to a discipline or profession appeared to encourage faculties to develop in certain ways (such as developing niche programmes to cater to markets for continuing professional education). In at least one case, leadership appears to have been the principle factor in moving a faculty away from the institutional norm.

Are there limits to how far from the institutional norm a faculty can stray? Clearly. Faculties operate within universities' governance, policy and budgetary frameworks, and are thus constrained in what they can do. Cultural and political boundaries can also come into play. If a proposed programme or activity strays too far from prevailing norms, it may fail to win academic approval or administrative support.

Although faculties are constrained by universities' governance, policies and budgetary arrangements, this research suggests that they can also influence the latter, and hence, potentially, their university's position on the institutional continuum. For example, the long-standing and successful international education activities of the University of British Columbia's faculty of commerce appeared to have paved the way for the development of its International Students Initiative.

How do institutions move along the continuum as the mix of their revenues changes? That is a question for future research, but this research provides some insight. It appears that many organisational attributes change gradually (*e.g.* attitudes, roles) or in stages (*e.g.* resource allocation mechanisms), but that some structures and policies may act like barriers to movement across the continuum. Such barriers may be rooted in government legislation. They may also be the product of university decisions or commitments that are not readily changed. For example, a collective agreement might prevent a university from rewarding (or sanctioning) faculty members based on student feedback and outcomes, as a non-unionised university might do and a for-profit provider would do. It may be hypothesised that universities move gradually across the continuum as public funding is reduced, until they come up against such a legislative or policy constraint. Either the latter blocks the

institution from conforming more closely to the market, in which case it suffers financially; or, the constraint is removed (for example, the government alters its legislation or the union concedes to a change) and the institution's adaptation to the market continues.

Bifurcation of education and research

This research suggested that one change that takes place with movement across the continuum involves the relationship between teaching and research. Numerous deans reported increased tensions of various kinds between these activities. Faculties that were required to teach large numbers of students and were constrained in the use of part-time and sessional faculty struggled to protect faculty members' time for research. Asked if the need to generate revenue was skewing her faculty's mission in any way, one dean said:

> "If [the expectation] is teaching and research, we're spending an inordinate amount of time on teaching … And we can't get the research [initiatives] that we want to up and off the ground … If you want to talk about thwarted ambitions, it's on the research side. Especially with the young folks, who are really concerned about that. One of the reasons we were able to recruit them was that this was a research-based institution. And, if we can't give it to them, we're doomed."

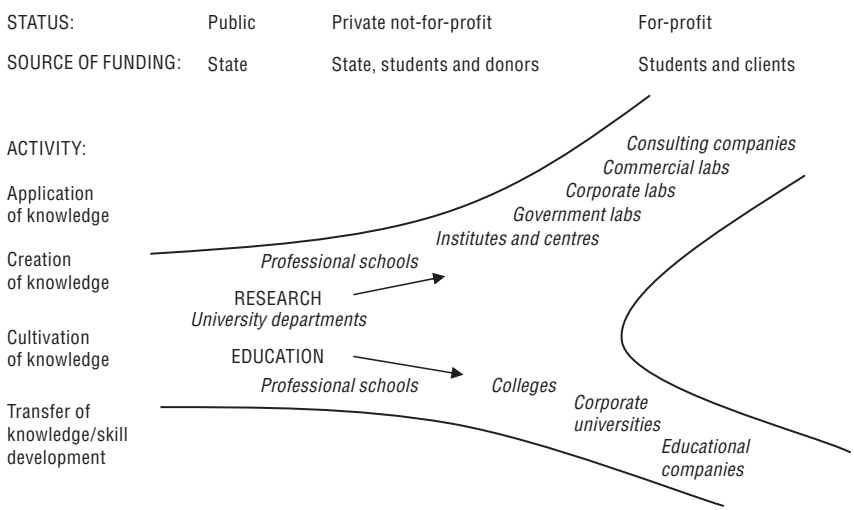
The deans of several research-intensive faculties described developments including: divergence between areas in which positions had been funded by external research sponsors and areas in which teaching capacity was needed; progressive separation of researchers from teaching and teachers – and disparity between the rewards accorded the two groups; and increasing reliance on practitioners and other part-time teachers to deliver instruction. These reports suggest that education and research are pulled in different directions as universities move along the continuum.

The manner in which university research is organised and financed, relative to higher education, differs from country to country. How closely the activities have been intertwined – and how fast and how far they diverge as the proportion of funding from private and public clients rises – would thus vary as well. Where education and research have traditionally been joint products, divergence can be anticipated, because "clients" for education and for research have different interests and needs. The complexity of the activities necessary to meet their needs – and the roles of regular faculty, sessional faculty and staff in carrying out those activities – vary, as well. The result, in the Canadian universities studied here, was that the teacher-scholar model appeared to be fraying. There seemed to be increasing separation of roles. Researchers in fields for which funding was plentiful appeared to enjoy improved financial rewards, institutional support, recognition and autonomy.

In contrast, the autonomy and/or rewards afforded to teachers appeared to be diminishing in some contexts. Particularly in schools that were highly dependent on tuition revenue, it appeared that professors were expected to be more collectively and individually responsive to student demand than was previously the case.

The evidence of divergence in demand, conditions and rewards for education and research is perhaps not surprising when one reflects on the fact, noted earlier, that for-profit providers of higher education do not do research. A diagram of the funding mix and attributes of institutions of higher education *and research* would thus take the form not of a continuum but of a Y, as depicted below. The diagram would show that the two activities, deeply intertwined in the public university sustained by unrestricted funding, change in nature and become separated as they become increasingly externally-driven.

Figure 3. **Higher education and research funding mix, organisational types and attributes**



At the left side of the diagram would be the hypothetical university that is sustained by unrestricted government funding for both education and research. It enjoys a high degree of autonomy and allocates resources centrally in accordance with what its members deem to be important, so there is little conflict between aspects of its mission. The university is organised in a way that favours individual creativity and innovation over co-ordinated collective action to a great degree. Institutional and academic autonomy are eroded as the proportions of funding in the form of fees, donations, targeted grants and contracts increase – and educational and research activities are more closely

tied to external demands. Co-ordinating activity to meet those demands becomes increasingly important, so faculty power decreases and hierarchy grows. University departments are no longer the only environments suitable for the types of research that take place in the midst of the spectrum. Indeed, some of their features, such as professorial autonomy and strong disciplinary norms, militate against responsiveness to the interests of students, donors and research funders, and clients. University centres and institutes, government laboratories, not-for-profit research organisations, and major corporate research divisions thus also perform targeted and applied research. Before the line between the not-for-profit and the for-profit sectors has been crossed, research and education have diverged. Both have become less complex activities, involving the application of existing knowledge to meet clients' needs. They are performed by different organisations serving different markets. "Research" is the province of commercial laboratories and consulting firms; education, that of proprietary or publicly-traded higher education companies, both of which must be highly responsive to the markets they serve.

This case research suggested that, in Canada during the 1990s, higher education and research were being propelled in different directions along the continuum. Whereas higher education in Canada was continuing to be privatised, there had been recent public reinvestment in research. Governments' expenditures on university research increased from CAD 1.2 billion in 1996/97 to CAD 2.5 billion in 2001/02. The public share of total sponsored research income (which more than doubled during the period) increased from 62% to 68%. (In contrast, governments' share of universities' operating income (which rose overall by 37% over the period) continued to fall, declining from 67% in 1996/97 to 60% in 2001/02.) The extent to which sponsored research funding increased varied greatly by field. And, as noted earlier, much of it came with hoops or strings attached. Nevertheless, in fields in which the injection of funds was dramatic, the value of academic capital increased correspondingly and researchers appear to have reaped not only improved funding and facilities for their research and better salaries, but greater autonomy. One of the vice-presidents research interviewed for this study, asked whether the need to generate revenue was skewing her university's mission in any way, thus responded to the contrary, owing to recent federal reinvestment in research:

> "It is thankfully moving towards the direction in which a researcher can pursue a certain area of research, because they see that as being the area where there is the greatest opportunity for breaking through and providing new knowledge. I think … how it's [been] skewed is toward greater academic freedom and greater variety of research."

Given that universities' educational activities were continuing to be privatised, while there was major public reinvestment in some fields of research, fundamentally different organisational milieux for education and

research appeared to be developing within some faculties. Considering that federal reinvestment in university research had begun only five years prior to the initiation of this research, the pace at which research was separating from instruction was astonishing.

Implications for future research

The research reported here involved a small number of universities in a single country. That said, Canada is a federation in which provinces have jurisdiction over higher education and the four universities were founded at different times. They therefore exhibited considerable diversity in terms of funding, governance and control, some being more private, others more public. For that reason, the model used and developed here may be of wider relevance. It would be useful to test it in other jurisdictions – to identify where institutions of higher education and research would be located on the continuum or "Y", based on their funding mix and governance, and to ascertain whether or not they exhibit the expected attributes. The results from countries in which public, private not-for-profit and for-profit institutions are all well-represented would be of particular interest. So, too, would comparisons of the attributes of institutions with similar funding and governance in different parts of the world.

If the hypotheses advanced here are correct, how a university is organised ultimately reflects the way it is financed. A sustained change in financing will eventually elicit a change in structure, as the university develops the mechanisms it needs to sustain itself in the new environment. An influx of public funding for education and/or research will diminish the need for hierarchy, empower faculty members, broaden activity and so on, particularly if the funding is unrestricted or takes the form of grants. Conversely, a prolonged reduction in public funding will cause universities to assume the attributes of institutions of higher education and/or research that rely in whole or in large part on revenue from students and clients. As suggested earlier with reference to Clark (1998), early adoption of these attributes may lead to institutional success.

Financing shapes the relationship between higher education and research and the way these activities are organised. If the public shares of funding for both higher education and research decline, it appears that these activities gradually bifurcate. University departments, the members of which engage in both teaching and research, tend to be supplanted by research centres and institutes, on one hand, and classrooms staffed by teaching faculty and instructors, on the other. Teaching and research activities become more responsive to their respective markets, but there is a corresponding decline in the universities' capacity to create and communicate knowledge – in

"the unfettered quest for truth" (to quote one interviewee) and its dissemination. If, in contrast, governments invest in research while shifting financial responsibility for education to private sources – as was happening in Canada during the 1990s – education and research diverge, but research and those engaged in it can be expected to gain in autonomy in fields targeted for funding.

Above and beyond their implications for public policy and for university management, these findings speak to those of us within universities about the relationship between the financing of higher education and research and the texture of university life. Are students likely to gain or lose clout within universities? Can junior faculty members expect to be teachers and researchers throughout their careers, or should they expect to become one or the other? Should they expect more or less individual autonomy? If the hypotheses advanced here are correct, the answers depend ultimately on how higher education and research will be financed.

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Twenty Practices of an Entrepreneurial University

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The idea of an entrepreneurial university caught on fast after the American sociologist Burton R. Clark published his books on entrepreneurship in universities (Creating Entrepreneurial Universities, 1998; Sustaining Changes in Universities, 2004). *Inspired by the alluring of the notion of an entrepreneurial university, and by decreasing levels of state funding for universities, we undertook a study on four very active ECIU universities (ECIU = European Consortium of Innovative Universities,* www.eciu.org). *To evaluate and quantify their level of entrepreneurship, we extracted from Burton Clark's case studies twenty organisational practices against which a university's entrepreneurship can be measured. These twenty practices or factors in effect formed the basis for an entrepreneurship audit. During a series of interviews, the extent to which the universities are seen as entrepreneurial by the interviewees was surveyed. We showed that the practices have been implemented only to various degrees and rather unsystematically. There are important differences among the universities, to some extent depending on the level of ambition that each university has regarding each practice. There are also important similarities; especially that entrepreneurship within universities has to be welcomed and facilitated top-down, but organically occurs and develops bottom-up. Implementing entrepreneurship at universities is thus about stimulating a culture of organic intrapreneurship and we provide practical recommendations and further research options to that effect.*

Introduction

In 1998, Burton R. Clark introduced the concept of the entrepreneurial university. The construct was based on his study of five European universities, *i.e.* Warwick in England, Strathclyde in Scotland, Twente in the Netherlands, Joensuu in Finland and Chalmers in Sweden (Clark, 1998). His main finding was that in order for a university to be entrepreneurial, the organisational culture must be characterised by a collective mindset in which entrepreneurship is facilitated in a combined top-down bottom-up fashion, including a high tolerance for risk-taking. An entrepreneurial university proved to be an organisation where risk-taking is a normal phenomenon when new practices are initiated, and where entrepreneurship is often perceived as taking innovative practices to a commercial profit-exploiting stage. The way in which the transformation of universities into entrepreneurial universities took place was through collective action. Clark noted that this transformation occurs when a number of various individuals come together and agree on a new organisational vision.

The subtitle of Clark's study was "organisational pathways of transformation" and his observations on pathways to the new entrepreneurial university vision can be summarised as follows.

First, at the heart of an entrepreneurial university one finds a strong and expedient central decision-making body able to react to expanding and changing market conditions. In his view, elite institutions can ignore a lack of steering capacity for some period because of the support and influence of other factors such as history, reputation, patronage, resources and competitive status. However, universities that are in a different position or that are more ambitious need to become quicker to react, more flexible and needs-driven in order to refashion and change their capabilities. Fast and innovative mobilisation of resources at all levels is of the essence, so the steering core must be able to embrace the values of managerial practice as well as the values of academia.

Second, entrepreneurial universities have active units, both in mainstream academic and specialist fields, which positively employ a dynamic and flexible approach to external activities and third-party relationships. According to Clark, entrepreneurial universities experience growth in units that cross organisational boundaries more quickly than traditional academic departments. They often do so through linking up with outside professional organisations and groups. Part of this growth is in the proliferation of

professional outreach offices that exist to focus on issues such as knowledge transfer, industrial contacts, intellectual property development, continuing education, fundraising and alumni affairs. Furthermore, the propensity to promote an entirely new periphery of non-traditional units is higher, and outward-reaching research centres are more likely to express non-disciplinary definitions of problems and research areas.

Third, the funding base of an entrepreneurial university displays a high degree of diversity where new and changing sources of funding appear on a continuous basis. Since an entrepreneurial university displays a high-risk profile, access to discretionary funds and a widened financial base is vital. Financial diversification especially occurs in the form of the so-called third stream funding, *i.e.* funding from private business, regional and local government, intellectual property rights, campus services, student fees, alumni fundraising, etc.

Fourth, the core academic units have adopted an entrepreneurial ethos. This is a crucial precondition for an entrepreneurial university since the main control of basic university activities often resides within the academic heartland. For an effective transformation to take place the academic core units need to aspire to becoming entrepreneurial units able to link with external organisations and derive third-stream income. From an organisational point of view, securing the support from the academic heartland is perhaps the most difficult part of being an entrepreneurial university and is often more difficult in social sciences and humanities than in technical sciences. In order to diversify activities and funding effectively entrepreneurs must have management authority and power and this implies a change of power relations that needs to be accepted by departments and faculties. Consequently, the academic heartland must accept a modified version of the traditional university management hierarchy, where administrative managers have power equal to that of professors, department heads and research team directors. Furthermore, the academic heartland must accept that research achievements may be only one of several ways to be merited within the university, others being the ability to teach innovatively, transfer knowledge to the external community, create bridging mechanisms, etc.

Fifth, the culture of the entrepreneurial university embraces entrepreneurship into its working practices and, in general, change is simultaneously welcomed, fostered and absorbed by the organisational culture. When an entrepreneurial culture begins to flourish it has a tendency to reinforce itself. Success with entrepreneurial practices will deepen an entrepreneurial culture, building strong roots and sustaining the capability to develop into a university-wide set of beliefs. If an entrepreneurial culture is to

be observed only in fractions of a university, some university-wide entrepreneurial actions are needed that are guided by a macro-institutional perspective and exerted by a strong central core.

Clark's initial insights about how universities embark on the pathways for transformation were elaborated upon in his subsequent study (Clark, 2004). Clark revisited the five universities that were central in his 1998 study and included a number of new cases, comprising Makerere University in Uganda, The Catholic University of Chile, Monash University in Australia, and a number of American universities, *i.e.* Stanford, MIT, University of Michigan, UCLA, North Carolina State University, and Georgia Institute of Technology. Clark observed both previously described practices and a number of additional organisational practices. He thus elaborated on his observations from earlier on. In his second book he stressed that a transformation to being an entrepreneurial university does not come about by focusing on one or a few practices. Transformation requires the simultaneous existence of seemingly opposite practices that involve a mutual reinforcement between stability and change. For instance, he points to "a 'steady state' infrastructure that pushes for change" and "includes a bureaucracy of change" (Clark, 2004, p. 5). He characterises the organisational foundation of the entrepreneurial university as "the steady state for change" (*ibid.,* p. 92) and discusses "how transformation and sustainability interrelate" (*ibid.,* p. 178). These are powerful metaphors as they combine concepts that basically contradict one another, but taken together they do signify strong organisational dynamics, effectively, in entrepreneurial universities where the status quo is to change continuously.

In order to capture the increasing complexity of Clark's concept of the entrepreneurial university, we decided to extract from both of Clark's books a list of pertinent organisational practices. This inventory was created by a detailed review of Clark's studies; we noted the instances in which he describes the various organisational practices in his case studies. We compressed them into twenty practices (see Appendix A). We subjected this list to a quantitative assessment as part of our interviews with key players at four ECIU universities. The purpose of our survey was to scrutinise the sobriquet of the entrepreneurial university and arrive at problem identifications and ensuing recommendations regarding the entrepreneurial universities studied (see also *Higher Education Management and Policy*'s Special Issue on Entrepreneurship, Shattock, 2005).

Recent approaches to the entrepreneurial university

In recent years, the literature on the entrepreneurial university has proliferated, as has the amount of related policy strategy documents pertaining to universities and their "commercialisation" throughout the world. This has

happened in a period of time when universities in most countries experience a decrease in the basic public funding for teaching and research. It seems reasonable to suggest that the fascination of the entrepreneurial university comes not only from the theoretical and practical attractiveness of the concept, but also from basic financial necessity. In fact, tracing the changes in the conditions for academia in Australia, Canada, United Kingdom and United States between 1970 and 1995, Slaughter and Leslie (1997) found that governments gradually give more priority to commercially oriented research at the cost of funding for basic research, and that public funding of education is continuously decreasing. In consequence, universities need to find alternative sources of funding in order to survive; this quest for alternative funding leads to "academic capitalism" in terms of a proliferation of market-oriented activities throughout university centres and across faculties. The increasing number of market-oriented activities is stimulated by a growth in support structures like technology centres that are able to create new sources of income but at the same time lead to "change in the knowledge base of fields, the organisational structure of the disciplines, and institutional resource allocation patterns" (Slaughter and Leslie, 1997, p. 176).

When observing the recent trend in academic capitalism, Slaughter and Leslie did not like what they observed. Their main concern was: What will happen to the autonomy of universities? They saw university autonomy decreasing, forced moves into academic capitalism and strategic research programmes. Some faculties will suffer more than others from this process. In effect, they call out for re-establishing the autonomy of universities by general public funding. This is quite different from the approach of Burton Clark (1998, 2004) who seems to accept that conditions have changed in favour of entrepreneurial universities. However, he is not at variance with Slaughter and Leslie (1997) regarding the need for autonomy. Discussing how to address the market, he distinguishes between two pathways: one that is "not only state-led but also system-centred and top-down in viewpoint" and one that is "not only university-led but institution-centred and bottom-up in understanding and advocacy" (Clark, 2004, p. 180). According to Clark, the "state-led pathway is clearly not one appropriate for change in complex universities in the fast-moving environments of the 21st century" (*ibid.*, p. 182). Instead Clark argues in favour of the second pathway to addressing the market. He claims that it must be applied in a diversity of ways: "… complex universities operating in complex environments require complex differentiated solutions: One hundred universities require one hundred solutions" (*ibid.*, p. 183). Thus, even though common practices may be identified their combinations are highly contextual.

Etzkowitz (2003) describes the occurrence of the entrepreneurial university as part of a historical process by which the university adds to its mission of

teaching and research a third mission of "economic and social development" (Etzkowitz, 2003, p. 110). He phrases the adding of a third mission as the "second academic revolution" as opposed to the first one that "made research a university function in addition to the traditional task of teaching" (*ibid*.). As part of the second academic revolution, research groups become quasi-firms in the sense that they "operate as firm-like entities, lacking only a direct profit motive to make them a company" (*ibid.,* p. 111). The increasing business-orientation of research groups is accompanied by the creation of liaison offices, technology transfer offices and incubators, in an almost linear fashion where research results are transferred through various organisational arrangements to a stage of commercialisation (Etzkowitz, 2004).

To some extent inspired by Clark, Etzkowitz (2004, pp. 65-66) observes what he calls "norms of the entrepreneurial university":

- capitalisation of knowledge;
- interdependence between university, industry and government;
- independence of the university as an institution;
- hybridisation of organisational forms in order to resolve the tensions between interdependence and independence;
- reflexivity in the sense that the internal structure of the university changes continuously "as its relation to industry and government changes", and that the same happens to industry and government "as their relationship to the university is revised" (*ibid.,* p. 66).

The point of view that Etzkowitz holds on the entrepreneurial university regarding the autonomy of universities is in contradiction to the point of view held by Slaughter and Leslie (1997) – because universities operate in complex and changing environment and have the capacity to change, by developing hybrid forms, they will be able to operate autonomously to a high degree. Clark (2004, pp. 179-184) adopts a medium position, arguing that universities need to be autonomous in order to be effectively entrepreneurial, but fearing that top-down state-led entrepreneurship may twist the nature of the entrepreneurial university.

An important issue touched upon both by all three approaches presented so far, *i.e.* Slaughter and Leslie (1997), Clark (1998, 2004) and Etzkowitz (2003, 2004), is the occurrence of conflicts on values and practices as part of organisational tensions which accompany the evolution of the entrepreneurial university. Clark (2004) is especially focused on how to create the mindset necessary for entrepreneurship, the basic problem being that traditional academic values differ from the values implied by entrepreneurship and that researchers are more often assessed according to the former rather than the latter, particularly in the social sciences and humanities than in the technical sciences. However, as evidenced by

Sotirakou (2004) in her study of organisational changes at 56 Commonwealth universities, value conflicts are only a part of the organisational conflicts to be resolved in becoming an entrepreneurial university. Incompatibility between assignments, responsibilities, expectations and resources become organisational tensions often creating numerous and serious role conflicts, especially at old universities when compared to young universities. Thus, the process of hybridisation argued by Etzkowitz and Clark requires careful deliberation on how to avoid goal conflicts and the resulting fatigue or inertia in the flexible university organisations.

The idea of universities being able to accommodate constant changes through hybridisation, brings connotations of the organisation theory of the "learning organisation" (Pedler *et al.*, 1991; Burgoyne *et al.*, 1994; Easterby-Smith *et al.*, 1999), the flexible organisation (Gjerding, 1996, 2003; Volberda, 1998) and the knowledge-creating organisation (Nonaka and Takeuchi, 1995; Krogh, Ichijo and Nonaka, 2000; Nonaka and Nishiguchi, 2001). All of these approaches are based on the notion that organisational dynamics derive from reconciling seemingly contradictory practices. They also share the idea that entrepreneurial practices emanate from within individuals and small organisational groups. Entrepreneurship cannot be solely decided upon top-down, but evolves bottom-up. In effect, we are not only dealing with entrepreneurship, but also with intrapreneurship that is increasingly recognised as the prerequisite for large organisations becoming entrepreneurial (Hitt *et al.*, 2002). Indeed it is even one of the main lessons from our empirical study to which we turn now.

Methodology

As mentioned at the end of the introduction, the purpose of our study was to scrutinise the sobriquet of the "entrepreneurial university" and identify specific problems and resultant recommendations regarding the individual universities studied. Consequently, the authors decided to focus on how entrepreneurship is perceived and pursued at each university by key players and to derive recommendations based on that understanding. The present study relies on a relatively small number of key individuals that are in a position to influence the direction of the universities in question. It is based on the assumption that the perceptions and opinions of key individuals are valid images of the policies and practices pursued by each university included in the analysis.

The operational objective of the study was to determine whether the universities in question were as they claim entrepreneurial, and how they can achieve an even greater entrepreneurial culture. The study took into account that there may be conflicting demands arising from the dynamics required for entrepreneurship, that formula-driven government funding may impose

financial pressures, and that quality standards in teaching and research must be maintained. In order to pursue the objective of the study, we had to reflect more on the implications of the Clark studies on the entrepreneurial university before conducting the interviews. In that spirit, three observations were made.

Firstly, the notion of an entrepreneurial university implies that universities have to operate on the basis of external pressures and demands that in some instances may limit how entrepreneurial universities may be. A key requirement is to educate graduates to meet the (inter)nationally required standards of the Bachelor and Master degrees, defined by formal definitions of competence levels and the content of these levels. Another key requirement is that the research of universities must conform to international academic standards on how good subject knowledge is produced and what good subject knowledge is. Funding of university activities is to a large extent regulated by these two requirements. Thus, the definition implies that entrepreneurship can only be pursued to the extent that the university fulfils its key obligations.

Secondly, the notion of an entrepreneurial university presupposes that the university operates within a context on which it depends. Since the context of each studied university is different, differing also across nations, the extent to which the universities are entrepreneurial must be defined with due reference to the unique context in question. This implies therefore that it seems impossible to define a uniform standard of university entrepreneurship when several universities within different national contexts are analysed.

Thirdly, our study had to take into account that the notion of an entrepreneurial university is not a very well or clearly defined concept. As explained previously, the concept is quite broad and relies on references to practices from several different universities within different national contexts. In order to develop a workable definition, we listed the various practices that Clark described in his cases and compiled them into an inventory of entrepreneurial organisational practices. The process of compilation resulted in the identification of twenty organisational practices (Appendix A). By organisational practices we mean "particular ways of conducting organisational functions that have developed over time" and by now have become taken-for-granted because "they reflect the shared knowledge and competence of the organisation" (Kostova, 1999, p. 309).

During the preparation of the study, the authors realised that they had to reconcile two analytical requirements. The point of departure of the study was that the research questions could be answered with reference to the decision-making reality of influential and informed players. The basic assumption of this choice is that key individuals can be sufficiently powerful to create and drive entrepreneurship within universities, partly through the creation of strong organisational structures. However, these key individuals and

organisational structures cannot *a priori* be assumed to operate in a way that corresponds with the twenty practices that we have identified from the Burton Clark studies. They may (and presumably do) act according to a different logic. Thus, it becomes important to discover this logic before assessing the degree of entrepreneurship of the universities implied by the inventory of practices. At the same time the research questions require that the logic discovered within the Burton Clark definition is confronted.

In order to confront both the logic of the key individuals and the logic of the twenty practices, a three-step analysis combining a qualitative and a quantitative approach was chosen. First, a number of interviews with key players at each university were conducted. The interviews were based on a limited number of questions that were kept open and asked informally in order to let the respondents reveal their thoughts about being entrepreneurial and the type of practices that need to be in place for entrepreneurship (cf. Appendix B). Second, the key players were asked to assess the extent to which their university complies with the twenty practices that we identified by analysing Clark (1998, 2004). Third, the resulting data was analysed.

The analysis reveals what the respondents think about entrepreneurship and which practices they think make their university entrepreneurial; which practices facilitate or create barriers to entrepreneurship; and how entrepreneurship within their universities can be further developed. The analysis also reveals how the respondents perceive their universities according to the Burton Clark definition. Finally, our analysis uses both data sets in order to make recommendations for furthering effective entrepreneurship in universities.

The basic approach of the study is hermeneutic, in the rather conventional way described by Arbnor and Bjerke (1997) and relying on the notion of sense-making (Weick, 1995). Instead of relying on a uniform definition of entrepreneurship, the study assumes that entrepreneurship may have different meanings in different contexts, depending on the people involved in entrepreneurship. The report aims to understand the actions, influences on the actions, perceptions on internal activities and interpretations of the social reality within which universities operate. The way in which the study creates knowledge is by discovering how key people interpret their context and actions, and what type of conclusions they arrive at on the basis of their perceptions. In essence, this means that entrepreneurship is seen as a social and contextual reality that is co-constructed by the individuals involved in that reality.

The hermeneutic approach implies that the data created during the analysis is derived through qualitative analysis. The qualitative analysis primarily takes the form of open questions in order *not* to impose the pre-understanding of the group members on the respondents. Instead, the

respondents have a large degree of freedom to define and describe what they mean by entrepreneurship and entrepreneurial practices. The influence of pre-understanding only occurs in the case of asking the respondents about the twenty given practices. Even in this case the hermeneutic approach is maintained, as the respondents appear to interpret the twenty practices very differently and are not influenced by the interviewers in doing so. As a consequence, any recommendations that come out of our study are highly influenced by what we as interviewers/authors have learned from the respondents. The recommendations can be seen as the outcome of a dialogue between and reflection of the authors and the respondents.

The respondents were chosen on the basis that the set – per university – should represent the following aspects:

- significant experience in university administration;
- position as an academic head of faculty/department/school;
- recognition as a successful entrepreneur within the university;
- independent of the university and able to provide an informed view from the outside;
- background in providing professional services/support activities related to entrepreneurship.

In total twenty-five interviews across the four participating universities were conducted with a range of four to six taking place at each university. This figure includes six respondents who were involved in piloting the research instrumentation. The main findings reported are based on the remaining nineteen interviews, including the quantitative assessment of the twenty practices that took place at the end of the interviews.

The interviews took place in four steps. *First*, the respondents were asked to define an entrepreneurial university and then describe in what sense they think that their university is entrepreneurial, and which main activities and people make their university entrepreneurial. These questions allowed for the respondents to define the agenda for the interview. *Second*, the respondents were invited to reflect upon the agenda by describing the key facilitators and barriers to entrepreneurship at their university. This part of the interview aimed to dig further into the state of effective entrepreneurship, as perceived by the respondent. *Third*, the process initiated in step two focussed the responses on the distinctive entrepreneurial characteristics of their university, and practices that could be developed or implemented in order to make their university even more entrepreneurial. Besides pointing to possible recommendations, step three also served as a further validation of what had been previously stated during the interview. *Fourth*, the respondents were asked to look at the university environment in order to find people and

organisations that are, or could become, important to the entrepreneurship of their university. Besides pointing to recommendations, the fourth step helped to make the respondent less focused on the practices within the university, if such a focus had occurred.

The interviews created a process of reflection and dialogue that increasingly validated what the respondents were saying, not only to the interviewer but also in their own minds. This created an interview where the respondent reflected on more than one question at a time.

At the end of each interview, the respondent was asked to assess on a five-point scale the extent to which his/her university complies with the twenty entrepreneurial practices that the authors have identified (*cf.* Appendix A). The purpose of the assessment of the twenty practices was to create a scoring matrix for comparison, both across the respondents within each university and across all the universities in question. Comparison of the scores indicated the following:

- the extent to which the universities comply with the inventory of practices;
- areas where changes are needed according to the inventory of practices;
- difference of opinion among respondents;
- the relevance of the practices to the universities in question.

The derived score list informs the recommendations made in this article.

In the following sections, the insights on entrepreneurial practices that were obtained during the interviews will be described with respect to four main areas:

- how the respondents define an entrepreneurial university;
- how the respondents understand the entrepreneurial practices of their universities;
- the main facilitators and barriers to entrepreneurship;
- the distinctive entrepreneurial practices and suggested areas for change at each university.

Defining an entrepreneurial university

During the conversations with the respondents – on how to define an entrepreneurial university – three main issues emerged:

- the relationship between being innovative and entrepreneurial;
- the importance of making money;
- the relationship between internal and external entrepreneurship.

In essence, all universities are supposed to be *innovative*, and they always are if innovative means that research and education are continuously developed and

pointed in new directions. However, being innovative does not necessarily mean that the university is *entrepreneurial*. Most respondents associate entrepreneurship with external collaboration by which the university contributes to the development and formation of companies and the evolution of society in general. Being entrepreneurial is regarded as time-specific, meaning that the university is located in a certain period of time and that the extent to which the university is entrepreneurial depends on the university's ability to contribute to the needs of firms and society in that period of time. One respondent summarised this issue by saying that being entrepreneurial today means that the university transforms itself from operating in the industrial society to doing so in the knowledge society. In order to be able to transform itself, the university must be innovative and externally co-operating at the same time.

The debate on entrepreneurship often equates entrepreneurship with *making money*. That is, the university should embark on activities that generate an incoming cash flow from the outside world. To some extent, the respondents were divided on this issue, presumably reflecting differences in traditions and funding across nations. While the aspect of generating commercially viable ideas and activities is widely agreed upon, the aspect of making money was most strongly pronounced in only one case and less pronounced in another case, with the remaining two cases taking middle positions. In all cases, gaining external funding is considered important and is actively pursued, but the emphasis on making money as a strategic objective in itself differs across universities. Some respondents point to the fact that the logic and time horizon of academic and market-oriented activities are often quite different, and the recognition of this point of view as part of a strategy for entrepreneurship may be one possible explanation for the observed difference.

Generally, entrepreneurship is not only perceived as a phenomenon that has to do with *external* relationships, but with *internal* relationships and activities as well. Several important features are pointed to. First, there need to be sufficient support structures that can assist researchers with getting funding, protecting intellectual property rights, commercialising viable business ideas, managing projects and so on. Second, the administrative part of the university organisation itself needs to be innovative and entrepreneurial. Third, there must be a willingness to take risks, financially and intellectually, and regarding intellectual risk there must be an academic recognition of high-quality applied research. Fourth, entrepreneurship must pertain not only to research and administration, but also to education because the whole ethos surrounding educational activities highly influences what is going on in other parts of the university.

The distinctive entrepreneurial features

Regarding the extent to which the universities are innovative and entrepreneurial and the main stakeholders and activities which contribute to this, several themes occurred as the respondents reflected on these questions.

The *history* of the university is very important because it defines the general ethos of the university, a history of being entrepreneurial means that the university is to some extent entrepreneurial in what it is doing, even though the management's or researcher's focus on entrepreneurship may weaken from time to time. Especially in two of the cases, the young age of the university provoked an entrepreneurial atmosphere because staff still feel that they had to prove themselves *vis-à-vis* the older and more traditional universities.

The *culture* of the university regarding the willingness to take risks and the willingness to promote applied research backed up by strong basic research is highly conducive to entrepreneurship. An important part of organisational culture is how flexibly rules are interpreted, and more specifically how rules can support entrepreneurship, but also when not to apply rules and rely on broad, activity-directing values instead. Finally, an ethos that emphasises the importance of external co-operation and the role of the university in the development of start-up firms and society has stimulated entrepreneurship at all the universities and is especially conducive in cases where there is a strong focus on solving real-life problems through collective research and learning.

Being entrepreneurial is subject to *diversity* at each university, simply meaning that some parts of the university are more entrepreneurial than others. The differences in being entrepreneurial are determined by three background factors. First, some fields of research and teaching, especially within the technical sciences, attract tertiary funding more easily and thus have better opportunities for being entrepreneurial. Second, some of the support structures for entrepreneurship are better linked with some parts of the university than others. (In fact these two points seem to be closely linked.) Third, the ethos of some fields of research and education offers fewer stimuli to entrepreneurial activities than others.

Finally, an *understanding of commercialisation* seems important at all universities. A recognition that entrepreneurial ideas have to be commercially viable enhances the ability to co-operate externally with firms and other organisations. However, many respondents differed in regard to the extent to which the universities in question are successful in creating and promoting commercially-viable ideas and the extent to which this should take precedence over other types of external collaborations.

Facilitators

The basic facilitators for entrepreneurship may be grouped into four main factors:

- organisational culture;
- supporting organisational structures;
- strategy in practice;
- external co-operation.

Regarding *organisational culture*, the ethos of the organisation seems to be crucial. If entrepreneurship is a basic value guiding what people are doing, the university will experience entrepreneurial activities even in cases where supporting infrastructures, funding systems and the like may not be ideal for promoting entrepreneurship. A culture of free discussion and inter-disciplinarity in research and teaching is conducive to entrepreneurship, especially if there is no contradiction between the academic virtue of publishing and the entrepreneurial virtue of co-operating with external partners. In general, it is important that the researchers understand and respect the culture of those with whom they co-operate.

Even though a university cannot be entrepreneurial without key individuals with a strong entrepreneurial spirit, *supporting organisational structures* need to be in place in order to facilitate entrepreneurial activities. Lump sum budgeting and a dynamic management mindset combined with supporting entities committed to entrepreneurship are essential, as is funding that can be used flexibly. Potential external partners often mandate matching internal funding. Thus it is important to have ready access to internal funds set aside for this purpose.

The type of *strategy* that the university leadership pursues *in practice* (rather than on paper) is important to entrepreneurship; a strategy that combines strong leadership with decentralised degrees of freedom seems preferable. A combination like this must take a form where individual researchers and groups of researchers are allowed to take intellectual risks without effectively risking their jobs and academic reputation. Associated incentive structures, financial and otherwise, need to be in place.

External co-operation is also an intrinsic feature of a university being entrepreneurial. Fields of technical science appear to offer more opportunities for external co-operation than human and social sciences. Human and social sciences do not academically offer fewer opportunities for external co-operation, but in practice this has been the case because of the availability of funding. Taking a key role in the development of the region in which the university is located stimulates external co-operation and hence entrepreneurship. However, it is also important that the university adopts a

national and global perspective in order to find partners that are sufficiently sophisticated for co-operation, especially important is co-operation with industry and support structures for company spin-offs.

Barriers

Logically, the major barrier to entrepreneurship is an absence of the key facilitators to entrepreneurship mentioned above. However, apart from this, the respondents' comments on barriers indicate that the basic barriers for entrepreneurship may be grouped into five main factors:

- flexibility of administration and regulation;
- risk-averse culture;
- absorptive capacity and recruitment of external users;
- long-term commitment to external co-operation and applied research;
- systems for spin-offs.

Regarding *flexibility of administration and regulation* there seems to be a tension between the governmental and administrative need for rule-guided behaviour and the entrepreneurial activities' need for flexible solutions. Lack of transparency in rules and administrative decisions, too centralised decision-making, and HRM policies which prevent flexible hiring in projects can stifle, or block, entrepreneurial initiatives. Low quality of administrative support is often experienced as a problem. Furthermore, management is often not project-oriented and planning cycles are too rigid.

A *risk-averse culture* often characterises the management decisions when it comes to the allocation of resources to new initiatives and the freeing up of existing resources to new forms of use. There is a tendency for management to equate entrepreneurial activities only with making money rather than with developing the quality of research, teaching, and external co-operation. In general, incentive structures need to be unambiguous and tuned to entrepreneurial activities, *e.g.* in the form of demand structures that result in positive incentives. Lack of security, job-wise and intellectually, prevents people from taking risks. Finally, in many cases, there is a general resistance to organisational change, both among administrators and researchers.

External users are often hard to come by, in the sense that many external partners do not have the knowledge or the willingness necessary for co-operating with universities. To some extent, the university must educate external users and provide them with opportunities they cannot refuse. Furthermore, a lack of alumni activities and effective lobbying mean that the university can miss entrepreneurial opportunities. Finally, the lack of a university "showcase" and worn-out buildings are often detrimental to external co-operation.

There is a need to strengthen *long-term commitment* in several fields. Often, money is more easily allocated for short-term purposes than long-term strategies which can limit the scope for sustainable entrepreneurship; resources for basic research that form the foundation for applied research are needed. Finally, there is a need for closer co-operation between the different research groups at the university as fragmentation of the university organisation into many different groups makes it more difficult for external partners to co-operate on a broad scale. However, de-fragmentation must not take place at the expense of decentralised decision making.

Systems for spin-offs are, in general, lacking. The universities are not sufficiently focussed on assisting students or faculty members to create start-up businesses. Seed capital is lacking, and there is often a lack of good practical business ideas. This is due to the primary educational and research focus rather than a focus on entrepreneurship while the knowledge and insights available within universities are generally underutilised by outsiders.

Contrasting the four universities with the entrepreneurial practices

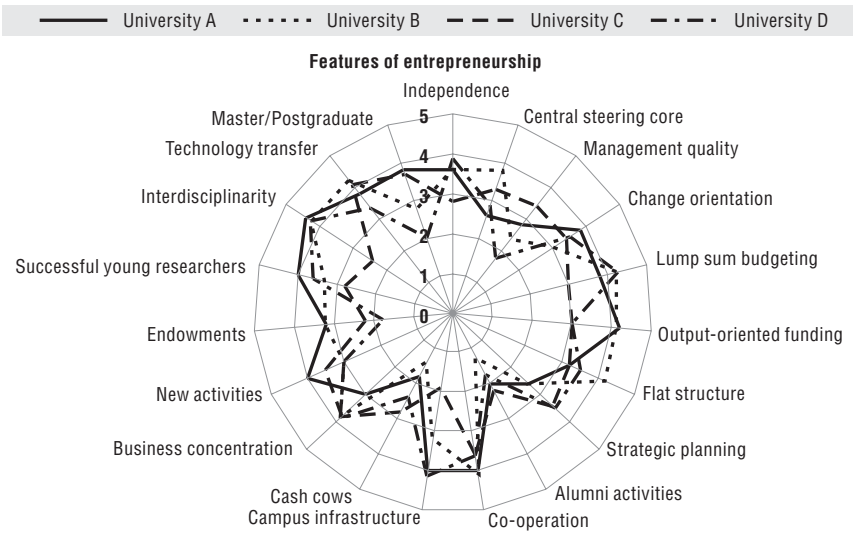
As explained previously, the respondents were asked to assess the extent to which their university adheres to the twenty entrepreneurial practices outlined in Appendix A. Each of the practices was scored on a 1-5 scale (see Figure 1 that shows the average score for each university). As can be seen from Figure 1, the universities display different profiles and the values across the twenty practices are unevenly distributed. However, since the number of observations is small the results must be interpreted with care. Calculating the arithmetic average value from the average values of the individual universities and pointing out where the variance of each of the twenty practices is more than 0.25, seven practices appear to display notable differences across the universities (*cf.* Table 1). These differences are touched upon in the following and explained on the basis of what has been learned from the interviews.

Regarding the *management quality of staff*, no university scored particularly highly. This implies that further investment in training and development of staff is required in order to promote greater entrepreneurship. In one case the low score was related to the problematic installation of a new IT management system; substantial performance loss resulted from staff being unable to properly make use of the new system. This, in turn, was largely due to poor staff development and training opportunities.

In terms of *output-oriented funding* Universities A and B were felt to perform particularly well, reflecting that output-oriented funding is a very well-established feature at these universities.

Figure 1. **The twenty Burton Clark practices at the four ECIU universities**

Average scores



Values:
1. Very poor 2. Poor 3. Okay 4. Good 5. Excellent.

Considering the *campus infrastructure* University C performed badly and the respondents generally recognised a substantial need for estate refurbishment and development.

Cash cows did not rate very highly at any of the universities, although Universities B, C and D considered them to be strategically important.

Concerning *endowments* University D scores lower than the rest, because there is no tradition of this within the nation in which this university is based. Whilst A and B did not emphasise endowments and were content with the scores given, C had recently decided to give endowments priority, thus finding the current situation unsatisfactory.

Regarding *interdisciplinarity*, all universities apart from C scored highly. Within A, B and D interdisciplinarity is considered as important and actively pursued, especially at A which has a strong tradition in the field.

Finally, A and C scored above average on *master/postgraduate* activities, whilst B and D scored below average. Within the former postgraduate activity has always been emphasised. The Bologna conversion to the bachelor/master system has yet to be implemented at B and D. Particularly in University D the focus was traditionally more on research than on teaching.

Table 1. **Ratings of the twenty Burton Clark practices**

Practices	Average value at each university				Total average	Variance	Std dev
	A	B	C	D			
Independence	3.6	3.6	2.8	3.9	3.5	0.16	0.40
Central Steering Core	2.6	3.8	3.3	2.9	3.1	0.21	0.45
Management Quality	2.8	2.4	3.4	1.8	2.6	0.36	0.60
Change Orientation	3.8	3.0	3.4	3.5	3.4	0.08	0.29
Lump Sum Budgeting	3.8	4.2	3.0	4.3	3.8	0.25	0.50
Output-oriented Funding	4.2	4.1	3.0	3.0	3.6	0.34	0.58
Flat Structure	3.2	4.2	3.2	3.5	3.5	0.17	0.41
Strategic Planning	2.6	2.6	3.4	3.5	3.0	0.18	0.43
Alumni Activities	2.0	1.3	2.2	1.8	1.8	0.11	0.34
Co-operation	4.0	4.1	3.6	3.6	3.8	0.05	0.22
Campus Infrastructure	4.0	3.2	1.9	4.1	3.3	0.79	0.89
Cash Cows	1.8	1.4	2.8	2.4	2.1	0.29	0.54
Business Concentration	3.0	3.8	3.8	3.9	3.6	0.13	0.36
New Activities	4.0	3.0	3.5	3.0	3.4	0.17	0.41
Endowments	3.2	3.2	2.2	1.8	2.6	0.40	0.63
Successful Young Researchers	4.0	3.3	2.8	3.6	3.4	0.19	0.44
Interdisciplinarity	4.4	4.2	2.4	4.3	3.8	0.67	0.82
Technology Transfer	3.8	4.2	4.1	3.4	3.9	0.10	0.32
Master/Postgraduate	3.8	2.8	3.7	2.0	3.1	0.54	0.74
Spin-offs	3.8	4.2	3.6	4.1	3.9	0.06	0.24
Proportion of practices with an average value > 3	70%	65%	55%	60%			

Scale: 1. Very poor 2. Poor 3. Okay 4. Good 5. Excellent.

The results endorse the practices of the entrepreneurial university culture. They highlight that universities striving to be recognised as entrepreneurial need to ensure that entrepreneurship is ingrained within their identities. It points to the fact that the change of organisational identity requires time and effort. While teaching and research are firmly perceived as part of a university's identity after the second academic revolution, the inclusion of entrepreneurship as a third part is still in its infancy, however evolving at increasing pace (Jacob and Helström, 2000; Etzkowitz, 2004). This goes for the universities we studied as well. Even though they consider themselves entrepreneurial and increasingly do expand activities, much still has to be done before entrepreneurship is fully integrated into teaching and research.

As it appears from Table 1, only 55-70 % of the entrepreneurial practices are valued by our respondents above the middle value of the 5 point scale that was used for scoring the practices. In the following, we point to the entrepreneurial practices that the individual universities need to address,

based on the scoring of the practices. The evidence from the interviews is used here again as a source for interpreting the scoring of the practices.

At University A the respondents attached a value greater than 3 to 70 % of the entrepreneurial practices. However, even though the university appears to be quite entrepreneurial, entrepreneurship is unevenly distributed across faculties. While the technical faculty is renowned for being entrepreneurial, entrepreneurship is less prevalent at the faculties for humanities and social sciences. In terms of the entrepreneurial practices, the university performs comparatively poorly with regards to a strong steering core, strategic planning, alumni activities and cash cows. The respondents generally agree that a strong steering core is less marked than at the other ECIU universities, and that strategic planning is generally lacking in terms of well-communicated plans. Generally, the decision-making culture has relied on decentralised decision-making within broad guidelines. Alumni activities and cash cows play a small role and is not in general emphasised by the university management, partly because it is not part of the tradition for higher education management within the country to which University A belongs.

At University B the respondents attached a value greater than 3 to 65 % of the entrepreneurial practices. In terms of the Burton Clark practices, this university performs comparatively low in terms of management quality of staff, strategic planning, alumni activities, cash cows and master/postgraduate activities. Regarding management quality, the university has implemented new IT management systems without also nurturing sufficient changes in management processes and associated staff development and training opportunities. In terms of strategic planning, alumni activities and cash cows there is commonality with University A. Finally, the low score in master and postgraduate activities may be explained by the fact that the national university system to which the university belongs is still in a period of transition to the bachelor/master system.

At University C the respondents attached a value greater than 3 to 55 % of the entrepreneurial practices. Furthermore, it also has the largest numbers of practices in the categories of "poor" and "very poor". This is a highly surprising result as this university is well regarded and externally perceived to be innovative and entrepreneurial. However, the interviews indicate that even though the university is highly innovative it is not necessarily entrepreneurial. This is a strong indication that innovation should not be confused with entrepreneurship when considering the entrepreneurial university. Furthermore, the respondents appear to have high ambitions and thus tend to score the entrepreneurial practices comparatively lower. This clearly indicates that any comparative study of the practices must take into account that different groups of respondents across a sample of universities may differ in the level of ambition that they attach to how the practices are implemented and used.

At University D, the respondents attached a value greater than 3 to 60 % of the entrepreneurial practices. In particular the quality of the finance staff, alumni activities, the ability to attract endowments and an insufficient share of master/postgraduate students was rated lowly. The scores reflect a general feeling among the respondents that the university needs to focus more on disseminating an entrepreneurial spirit throughout the university, co-operating closer with firms and external funding sources, and upgrading the skills of support staff.

Reflections on our results

Regarding the *general findings* of our study, it is important to notice that most of the respondents associate entrepreneurship with external collaboration through which the university contributes to the development and formation of companies and the evolution of society in general. The growing importance of external collaborations is increasingly being recognised by higher education managers and scholars in the field of university management, and has during the recent years been phrased in terms of the triple helix model (Leydesdorff and Etzkowitz, 1996; Etzkowitz and Leydesdorff, 2000). According to the triple helix model, the relationships between universities, industry and government become increasingly intertwined, creating activities of collaboration where the different rationalities of universities, government and industry are bridged and merged. The activities of collaboration will change through time and assume various forms, creating a diversity of structures that we also have been able to observe through our study. Although the notion of a triple-helix has yet to gain a general acceptance within the scientific community (Shinn, 2002), it seems promising in the sense that it "stresses historical continuities" of the relations between universities, industries and government (*ibid.,* p. 600), "has developed an empirical base, in the form of multiple case studies" (*ibid.,* p. 604), and "explicitly addresses concrete and pressing problems of government, academic and industrial policy" (*ibid.,* p. 605). Furthermore, it is "accompanied by a theoretical framework that takes the form of self-organisation and co-evolutionary theory" (*ibid.,* p. 606). The findings that we have reported above indicate that the key actors that we interviewed are very much aware that entrepreneurial practices depend on the persistence of external relationships and the evolution of bottom-up organisational practices.

Thus, the notion of a triple helix captures the perceived reality of our respondents and seems to be a promising line of future research. However, our findings indicate that in order to pursue future research on the entrepreneurial university, one has to take into consideration that establishing an entrepreneurial university involves developing an entrepreneurial culture while addressing the practical problems of higher education management. These issues have only been addressed to a modest extent by the triple helix research. In effect, we recommend that future studies on the entrepreneurial university

aim at integrating theories and insights on entrepreneurship and intrapreneurship, organisational culture and higher education management.

In a recent contribution Clark (2005) stresses the importance of cumulative analysis in terms of institutional case studies. The way in which we have approached institutional case analysis in our study is by way of grounded theory, employing a hermeneutic approach. Instead of relying on a uniform definition of entrepreneurship, our study adopts the approach of Burton Clark in assuming that entrepreneurship may have different meanings in different contexts, depending on the people involved in entrepreneurship. The study aims to understand the actions, influences on the actions, perceptions on internal activities and interpretations of the social reality within which universities operate. Thus, the way in which our study creates knowledge is by discovering how key people interpret their context and actions, and what type of conclusions they arrive at on the basis of their perceptions. In essence, this means that the study sees entrepreneurship as a social and contextual reality that is constructed by the individuals involved in that reality.

Ideally, we should have had further post-interviews to inform the respondents of the overall results from the interviews and then conduct renewed dialogue based on the findings, especially focusing on how the answers to the open questions correlate with the scoring of the twenty entrepreneurial practices. The dialogue should then have continued until some sort of intersubjective agreement on entrepreneurship had been arrived at. Due to time limits this was not possible.

Taking this limitation into consideration, our study still implies some important recommendations for the management of higher education. It is vitally important to develop a clear and commonly agreed upon understanding of what entrepreneurship contextually means and how it is applied (and why) to a specific university. This understanding must be operational in terms of goals regarding teaching, human resource development, innovation, and creation of value for society and monetary profits, and how these goals relate to academic achievements. Especially important is to include an assessment on the type of risks that the university management is ready to accept and how risk-taking affects academic careers. It is necessary to strike a balance between central steering and entrepreneurial freedom that allows self-organising processes to occur. Self-organising processes require a flexible yet highly professional support structure that responds to the demands of entrepreneurial activities. Demands through which entrepreneurs are rewarded in terms of free resources, time for research, academic recognition and to some extent monetary rewards.

These recommendations come directly out of the reactions to our open questions that the respondents have given. It appears from our study that even though the four universities we studied strive to become fully-fledged

entrepreneurial universities, they still have a long way to go. The impression from the interviews is that if the recommendations implied by our inventory of practices are met, entrepreneurship will catch on and spread throughout the university organisation. We might summarise this conclusion in terms of "viral entrepreneurship – catch it and share it". However, considering the present state of the universities that we studied, our *bon-mot* of "viral entrepreneurship – catch it and share it" may be described as an inspirational strategic vision rather than as a reality. Instead, the present state of the universities that we studied may be phrased as "virtual entrepreneurship", referring to the fact that entrepreneurial ventures occur on a small scale surrounded by an institutional "baggage" that is truly a different context or mode of operating. Thus, with inspiration from managerial theory, we may argue that "intrapreneurship" is the more proper term to describe the phenomenon under study. In effect, we recommend that insights from the growing literature on intrapreneurship is applied in future cumulative studies of entrepreneurial university practices, particularly when studying university cultures, including the degree of affinity between entrepreneurial ventures and their institutional contexts.

In conclusion, we would like to add a final word of caution and recommendation for future research reflecting on the method that we have used. The type of grounded theory approach that we have applied in our study implies that we rely heavily on the perceptions of our respondents without taking into consideration how these perceptions are affected by the organisational culture and climate within which our respondents live their lives as organisational members. This approach is in line with the approach of scholars like Etzkowitz and Leydesdorff who analyse the entrepreneurial university as a type of general standard of organisational practices that can be achieved across various cultural and national settings. However, the organisational culture and climate constitute the institutional setting within which entrepreneurial practices can be envisioned, developed and implemented, and therefore future studies of the entrepreneurial university have much to gain from drawing on the diversity of theoretical perspectives that have been developed in the field of organisational culture (see for example Ashkanasy, Wilderom and Peterson, 2000, for an overview). Especially in the case of comparative studies across cultures, lessons from theories on organisational culture and climate as well as *intra*preneurship become important.

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APPENDIX A

The Twenty Burton Clark Practices

1. **Independence of government funding**

   The university does not need to seek approval from governmental offices for major investments, *e.g.* to establish new scientific branches (for research and teaching), commercial units, etc.

2. **Emphasis on a central steering core**

   There is a strong and decision-orientated senior management group delivering expedient outcomes on entrepreneurial requests; participation of wider academic and student committees is less important.

3. **Management quality of staff (especially in finance)**

   The university hires quality professionals and offers sufficient staff development programmes to maximise their input and retention.

4. **Entrepreneurial culture**

   The administration and academic staff have a culture of change rather than a rule-based orientation; they prefer innovation and realisation of new ideas instead of strong rule-executing.

5. **Lump sum budgeting**

   The university is largely permitted to use government funding as it wishes (*e.g.* it can transfer funds between personnel, IT, estates and other infrastructure and investments) and can retain annual unspent income (*e.g.* to set up strategic funds).

6. **Output-oriented contracts with financiers**

   Government, foundations and other financiers funding is calculated and based on measurable outputs and outcomes, and these are monitored through regular reporting.

7. **Flat structure**

   Reporting barriers and hierarchies are minimised between the centre and base units in order to shorten idea creation and associated decision-making processes.

8. **Mission statement and strategic plan**

   There is a well-communicated paper which is a guideline for all the strategic decisions and objectives of the university.

9. **Extensive alumni activities**

   There is a programme of extensive and appropriate alumni-funding or other alumni support activities.

10. **Co-operation with industry and other (excellent) universities**

    The university realises possible synergies in research, investment in research equipment, teaching and other useful activities with a network of excellent individuals and institutions.

11. **Competitiveness of campus infrastructure**

    The campus and its environs are attractive environments for the recruitment and retention of excellent students.

12. **Additional funding through "cash cows"**

    Establishing third-stream income sources, *e.g.* conference centre, management/business school, other offers for "lifelong learning", hotel, etc.

13. **Focus on a limited range of teaching and researching fields**

    Management of the university should not be over-stretched through extremely diversified activities in fields which are outside of the core know-how.

14. **Monitoring future opportunities in teaching and research**

    The university has a permanent sight on the development of the teaching and research markets and reserves resources for fast response to such market developments.

15. **Attractiveness for endowments**

    The reputation of the university, its plans and alumni attracts regular and substantial donations.

16. **Attractive environment for young researchers**

    The university recruits and retains successful young researchers because they can attract students and donors and carry out innovative research.

17. **Interdisciplinary research structure**

    There is an established organisational structure in research and teaching which supports intra-organisational co-operation.

18. **Technology transfer**

    There are well-established/structured technology transfer processes into the region.

19. **High share of master and postgraduate students**

    New teaching income streams are developed by thinking beyond traditional/historical reliance on undergraduate activities.

20. **Service-offers for spin-off/out companies**

    There is logistical support for gaining risk capital, consultation, office and small production facilities, finding guarantors, etc.

APPENDIX B

The Open Questions of the Interviews

How would you define an entrepreneurial university?

In what sense do you think that this university is entrepreneurial? What are the main activities and people that make this university entrepreneurial?

What do you think are the key facilitators in this university for entrepreneurship – if possible please identify the main three?

What are the (three) key barriers in this university to entrepreneurship?

Is there anything unique or distinctive about this university's entrepreneurial practices?

What else could this university do to increase entrepreneurship? Are there any practices you think are missing which ought to be in place?

Are there any external individuals or organisations that have major influence on entrepreneurship, either as a facilitator or obstacle? Are there any external people or organisations that you would like your university to co-operate with in order to facilitate entrepreneurship that it is not currently co-operating with?

Is there anything else we should know, but didn't ask or discuss, about this university as an entrepreneur? Could you point to other universities that you find entrepreneurial to an extent that you would like this one to be?

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British and German Education Students in a Shifting Scenario

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An empirical study was undertaken of students in the United Kingdom and Germany in order to investigate whether their attitudes were moving away from traditional patterns towards those that might be expected in more marketised higher education systems. The British students were found to be more instrumental and materialistic in relation to their future career and earning prospects. They stressed the intellectual dimension of higher education, whereas the Germans tended to stress personal development, and were keener on socially useful work. However, the United Kingdom students cared much more about human relationships within their higher education institutions, and rated them much more positively. Despite fears that market-oriented knowledge concepts lead to theory-aversion, the United Kingdom students displayed more intellectual enthusiasm and expressed more interest in future graduate study and research. It is speculated that the underlying concept of knowledge may be different in the United Kingdom. The British students were more aware of quality assurance measures within their institutions and more satisfied with their courses than their German counterparts. By contrast, the British staff were in important respects less satisfied in their work than the German staff, so the satisfaction of the students seems to be achieved at their expense.

Impetus for change

It is commonly argued that higher education (HE) is changing in response to the imperative of market forces and competition. Much work has been done on how this is impacting upon aspects of HE such as finance, management and the academic profession, but less attention has been paid to those who are learners within the system. The aim of the present study is to focus upon students in the United Kingdom (UK) and Germany in order to assess the extent to which their beliefs and attitudes may be diverging from traditional mind-sets and veering towards those more associated with market forces in higher education. The notion of "academic capitalism" has been developed by Slaughter and Leslie (1997) who define it as a combination of the market and "market-like behaviour". These involve initiatives such as manipulating formula funding to introduce competition, reducing dependence upon the state, increasing consumer choice, enterprise and privatisation. They are convinced that the public universities of most westernised countries are moving towards this mode and believe that it impacts upon values, norms and beliefs in a way that is destabilising patterns of university professional work developed over the past hundred years. They test this hypothesis upon academic staff in four countries: Australia, Canada, the United Kingdom and the Unites States. Not all these four countries responded to globalisation in the same way, but in all of them postsecondary education was directed towards national wealth creation and away from traditional concern with liberal education (*ibid.,* p. 37). This trend may be expected to impinge upon attitudes and experiences among students, though of course the nature of the academic discipline in which they are involved will exert a modifying influence.

In Slaughter and Leslie's study, the focus was upon technology and science, whereas in the present study it is upon the discipline of Education, but not always in the narrowest sense of preparation for teaching. Some of the student sample engaged in it as a discipline in its own right and some were intending to enter a variety of social professions on the basis of their Education studies. This disciplinary subculture needs to be borne in mind when interpreting the results, because Education may be less susceptible to marketisation than technological and scientific disciplines. The attitudes of Education students have a particular importance in terms of their social impact because they touch many people in the formative stages, both in schools and in community-based professions, and are important for the

control of society by the state (Wilkin, 1996, p. 36). For the purposes of the present paper, four main areas have been selected for study: collegiality and the unity of teachers and learners; liberal education and instrumentalism; interest in research and unity of research and teaching; and choice, quality, satisfaction and institutional loyalty. The work reported in the present paper is part of a larger study funded by the Leverhulme Trust and the Economic and Social Research Council (see Pritchard, 2005, 2006).

The question may be posed, why choose Germany and the United Kingdom for a study such as this? The answer is that in the development of the modern university, they were the two most influential models in the world, though they are now rivalled by American models of which there are several. Rothblatt (1997, p. 2) in surveying "the idea of the idea" of a university discovers that "a backward look always encounters two stubborn traditions of idealising universities, the first English and the second German"; and elsewhere he refers to the "secure belief in a single, animating essentialist 'idea' of a university as represented in different ways by the idealist philosophical traditions of Romantic England and Germany". This "idea" was always full of ambiguity and is, he admits, largely gone ("[…] though its enchantments undoubtedly remain"); however, the author reminds us that the value of an ideal is in trying or reaching, rather than grasping. An imposed ideal would lose its power, becoming a mere orthodoxy with no power to lift the imagination (Rothblatt, 1997, pp. 9-10, 70).

Collegiality and the unity of teachers and learners

The modern university is a product not of medieval times but of the 19th century. An ideology for universities was consciously articulated in both Britain and Germany, when new institutions such as the Catholic University of Ireland (later to become University College Dublin) were founded by Paul Cullen and John Henry Newman, and the University of Berlin by Wilhelm von Humboldt and his colleagues. They focused upon the nature of human relationships within the institutions, the nature of knowledge, the role of research and the professional purposes of higher education (*e.g.* generating lawyers, teachers and civil servants). The idea of a community of scholars occurs in both Britain and Germany though in different ways. In the former, it arises from the collegial, originally monastic, traditions at the most prestigious universities (*e.g.* Oxford and Cambridge), and has become generalised as an ideal extending beyond these higher education institutions (HEIs). Rothblatt (1968, p. 247) emphasises the importance of human relationships in a late Victorian university such as Cambridge where a college provided what no lodging house, hostel or non-collegiate body could provide: "the close action of the teacher on the pupil, of the matured character on the unformed, of the instructed on the learning mind", all of which were "not

without a very beneficent reaction of the young on the aging man". So the benefit was mutual, and was intensified by the residential nature of universities. Up to the present day, in some of the top British universities such as Cambridge, lecturers are still actually expected to offer domestic hospitality to their students, and they are sometimes given a small financial allowance to do so. Such invitations are meant to demonstrate commitment and caring, but the expense of this way of life made the English model less attractive than the German model which was "easier to assimilate because it was not based on the expensive institutional arrangements of Oxford and Cambridge" (Rothblatt, 1997, p. 33).

Within the Humboldtian ethos, professors and students are regarded as equal *vis-à-vis* knowledge, because it can never be "possessed" and no one has a monopoly of it. This is an essentially democratic concept. Fichte (1807, p. 141) stresses that the love of learning is of divine origin: it emanates from the lecturer as the initial focus and binds all the seekers after knowledge into an organic whole of "learning individuals". Schleiermacher (1808, p. 253) believes that the acquisition of knowledge is facilitated if the lecturer is a good human being, and enjoys close relationships with the students. This is a formulation of the concept of the "unity of teachers and learners" that underlies the traditional German university ethos. It has, however, been partially vitiated by high staff-student ratios (depending upon how they are calculated, as high as 1:46), and by the fact that there is no "undergraduate" course in Germany so far (Gellert, 1993, p. 21). The Bologna Agreement is now causing a course re-structuring into Bachelor of Arts (BA) and Master of Arts (MA) degrees, but traditionally German students have studied for long periods and are on average much older than their British counterparts. Does this make them less dependent upon good relationships with their teachers? Although at doctoral and post-doctoral level, close and cordial relationships of the kind described by Fichte and Schleiermacher often do pertain, yet below that level the high numbers of students make it difficult for the average lecturer or professor to do more than the minimum: hold the weekly *Sprechstunde* or academic advice session. Increasing attempts to introduce a market into higher education would, however, require more personal care at least in the more prestigious institutions (and it should be noted that German higher education is still binary: the universities where teacher education is carried out, and *Fachhochschulen* where more technical disciplines like Engineering prevail). The questions were therefore posed:

1. To what extent are human relationships important to students and staff within their higher education institutions?
2. How is academic engagement embedded within the human framework?

Liberal education and instrumentalism

In the traditional approach to higher education, both the Germans and the British have had reservations about utilitarianism as the exclusive aim of higher education, though they did admit professional education as one of its legitimate purposes. Newman (1852, p. 93) stated: "Knowledge is a state or condition of mind; [...] there is a knowledge which is desirable though nothing come of it, as being of itself a treasure, and a sufficient remuneration of years of labour." He emphasises that liberal knowledge and liberal pursuits belong to the mind, and contrasts a liberal education with a commercial or professional one, although he would not deny that "commerce and the professions afford scope for the highest and most diversified powers of mind" (*ibid*., p. 87). Yet, in the end, there was a disdain of the economic, and it was believed that "the unrelieved pursuit of wealth corrupted moral natures" (Rothblatt, 1968, p. 245). Distinction was related to character and moral education. Gellert (1993, p. 35), a German scholar who worked for a long period in the British HE system, claims that in England the intellectual function of learning "always remained embedded in the broader function of improving a person's personality". Balance is all, and the personality must not become subordinated to the skill. This is one reason for the British cult of the amateur and one reason too why until recently it was not fashionable at Oxford and Cambridge for staff to have doctorates.

The German university was more concerned with the intellectual, and the University of Berlin was the first in the world where research and not just instruction was regarded as a primary duty of its professors (Liedmann, 1993). Yet the intellectual orientation was mitigated by a German concern for *Bildung*. This implies the forming of the inner person by the cultural and educational environment in which "the true aim of man [...] is the highest and best proportional development of all his capacities in order to form a wholeness of himself" (Cowan, 1963, p. 142). *Bildung* as a term is derived from the word *Bild* (picture), and the idea of *Bildung* as making a living picture of oneself corresponding to the highest ideal – humankind as a image of God – emanates from Lord Shaftesbury for whom it was a mystical principle of immanence (Weil, 1930/1967). *Bildung* stresses the importance of education as a means of forming moral and independent human beings, and gives rise to a non-utilitarian ethos that contrasts with a narrow, vocational orientation: Friedrich Schiller, for example, deplored study purely for the purposes of earning one's crust (see Pritchard, 1990) though like Humboldt he accepted the practical purposes of the university, such as professional education for students of law and medicine. In this respect as in some others, the British and the German university concepts overlap.

However, in a higher education system subject to the influence of market forces, the primary purpose may shift from the promotion of knowledge to that of serving the economy. The university is expected to become an engine of wealth generation rather than a means of searching for truth, which anyway in the post-modern concept is regarded as contestable; so social usefulness becomes the criterion of being valued (Henkel, 1999, p. 13; Välimaa, 1999, p. 24). Under these concepts, one could expect student attitudes to be instrumentalised and career expectations to become more materialistic. The pursuit of "knowledge for its own sake" would become obsolete. In the field of teacher education in the United Kingdom, what counts as knowledge has changed markedly, and has moved away from the so-called "foundation disciplines" such as psychology towards a more practical orientation. For some time it has been a statutory requirement that a large proportion of the students' available time be spent in classroom teaching. This raises questions about the status of the knowledge that they acquire. Biesta (2002) in a paper entitled "How General Can *Bildung* Be?" argues that the individual should not just adapt to reality as it is, nor be led only by his or her interests in relation to that reality, but must be brought in touch with what is general, original and enduring. The extent to which this is happening is open to question. Lyotard has claimed that the status of knowledge changes as universities enter the post-industrial world: knowledge is no longer an indispensable element for training the mind, and is being subordinated to the principle of performativity with the result that whole systems become dedicated to performative behaviour (Cowen, 1996; Lyotard, 1984). Teacher education is particularly susceptible to change in this direction because of necessity it involves *doing* (performance) as well as *knowing*. In the light of these considerations, questions may be posed as follows:

3. Do the students and staff in the present study value intellectual over holistic personal development?
4. In what measure do students manifest an instrumental attitude towards their courses?

Interest in research: unity of research and teaching

The somewhat instrumental nature of some British academic programmes might lead one to suspect that they will be uninterested in research. Germany featured the research university long before it was widely accepted in the United Kingdom, and part of the Humboldtian ideology is the "unity of research and teaching" under which there is an expectation that the professors will use the results of their research directly for teaching purposes. Gellert (1993, p. 17) points out that first degree students are expected to master their subjects fully, "and in the end to be qualified to engage in research", so

the traditional programme is intended to include an induction into research. Professors are traditionally concerned to ensure the reproduction of the academic profession by stimulating research so that there will be sufficient younger staff to replace them when the time comes. Gellert (*ibid.*, p. 10) states that until the 1870s, German universities were virtually the only institutions in the world in which a student could do scientific or scholarly research. Across the channel in the British Isles, Newman (1852, p. vii) actually began by disregarding research as a core task of the university, but later saw that no hard and fast demarcation line could be drawn between research and teaching. However, the implementation of research within Britain was not immediately carried through, and eventually it was from the Germans that the British adopted the idea of the doctorate (Simpson, 1983).

In a more marketised world, it may no longer be possible to induct students into the principles and ethos of research. Teaching and research are funded separately in the United Kingdom, and although staff are encouraged to use their research in their teaching, there is not the same tradition of doing so as in Germany where the "freedom of teaching" *(Lehrfreiheit)* permits an academic to teach what he professes intellectually. The UK Research Assessment Exercise (RAE) puts staff under considerable pressure to conduct and produce research publications. Although not all students in the present study were aiming at Qualified Teacher Status, those who were had to follow statutory *curricula* according to which most of their time had to be spent in school experience rather than at university. In fact, Wilkin (1996, p. 146) states that in the United Kingdom "[…] for the Thatcher government, theory within [teacher] training creates inefficiency": she argues that for the neoliberal reformer, the theorist interrupts the market relationship between the teacher who actually produces teaching and the consumer. This anti-theoretical bias reduces the opportunity for HEIs to influence teacher trainees. The trend towards performativity, discussed above, may well direct British students' attention away from any interest in research or in the more theoretical aspects of their subjects. In view of these considerations, the question was therefore posed:

5. How positive are the students' attitudes towards research?

Choice, quality, satisfaction and institutional loyalty

In a system subject to market forces, students are seen as clients who are allowed to choose their institutions, informed and attracted by information contained in league tables assessing teaching and research: so choice is supposed to be based on quality. In much European change, the example of the United States has been a model. Slaughter and Leslie (1997, p. 44) point out that in the United States, a high-tuition and high aid policy was developed through which the government gave funding to students rather than institutions, and

higher education institutions competed with each other to attract students and their grants. However, there are ways in which the US situation is relativised in the United Kingdom and in Germany. Whereas the government or the students pay the fees in the former, the levying of fees has until recently been legally excluded in Germany for initial degrees. In any case, students are only clients in a limited sense. Shattock (2003, p. 94) remarks that institutional relationships with students function somewhat like those with a monopoly contractor, and Williams (1999, p. 149) asserts that "the essential feedback loops of efficient markers are absent for students. In a real market economy, consumers should be well-informed about the likely outcomes of their purchases, and have the opportunity of learning from experience in making subsequent purchases"; in higher education, however, decisions are difficult to reverse, and the ultimate outcome of a choice may not be apparent for a long time. Higher education in fact constitutes a quasi-market, with the state as a monopsonistic buyer purchasing education on behalf of the students, and HEIs being more concerned to meet the requirements of the proxy buyer rather than those of the real consumer (*ibid*., p. 150). Of course, students expect that their university courses will equip them to earn money in the labour market, and may regard their education as a form of investment in their own future.

Despite these caveats, students may still constitute a market force to be reckoned with. Courses that are under-subscribed get closed in both the United Kingdom and in Germany; and institutions that are known for a positive quality of life attract students. Factors such as beauty and liveliness of location are important resources in contributing to institutional success (Shattock, 2003, p. 12). In the United States, much attention and money goes into making universities pleasant places to live and work, and ensuring that the quality of life is agreeable; Barnes (1999, p. 188) suggests that in a market system, students may find that their needs are taken far more seriously. A positive experience validates the HEIs' claim to alumni support after the students have left, and further strengthens the market model. Satisfaction levels with their HEI will obviously be important in coaxing them to make donations to their alma mater, once they are launched upon their careers. Rothblatt (1997) states that: "One of the most extraordinary differences between American and British higher education [is] the care taken in the United States to secure the moral, political and financial support of graduates and their attachment to the alma mater"; and elsewhere he points out that "[…] no part of the [American] higher education system stirs up as much emotion as the alma mater or commands as much alumni loyalty as the undergraduate college" (Rothblatt, 1993, p. 10). Important in commanding the loyalty of students is what Rothblatt calls the "co-curriculum" by which he means the apparatus of non-academic functions such as housing, financial aid, health service and counselling which is associated with academic

functions. These facets of HEIs too have their power in commanding student loyalty, and research, he firmly believes, must be grafted onto the undergraduate experience. But as we have seen, traditionally no distinction has been made between undergraduate and postgraduate study in Germany, and the students are on average older there than in the United Kingdom. This may constitute a marketing handicap for universities seeking to develop alumni associations. In view of these considerations, the following questions may be posed:

6. How far have the students been able to exercise choice in the selection of their HEI?
7. To what extent do the students perceive the quality assurance regime as functioning effectively within their HEI?
8. How satisfied are the students with their courses?
9. Would students be prepared to make financial donations to their HEI from future earnings?

Methodology

The present study addressed academic values and attitudes amongst staff and students in the discipline of Education in German and British universities. The first phase, conducted in Germany, was funded by the Leverhulme Trust and the UK phase was sponsored by the Economic and Social Research Council. In both Germany and the United Kingdom, the higher education system has experienced considerable turbulence in recent years, leading to a complex mosaic of types of institution. Both countries have long-established prestigious institutions, strong civic universities, relatively new universities and various sizes of universities; both have also experienced mergers and other forms of organisational change in the context of national debates about the shape, size and structure of the higher education sector. In both countries there has been increasing pressure for financial and academic accountability, although in Germany the regulatory requirements for quality assurance are less centralised than in the United Kingdom. The diversity of institutions and the complexity of differentiating factors – not to mention logistical issues about access and confidentiality – militated against a methodological approach of establishing and stratifying national sampling frames of universities and then using probability sampling to select courses, staff and student participants.

It was possible, however, to select 12 universities in each country that covered the types of institution that offered Education, including vocational teacher education. The universities were selected to provide a geographical spread, and to cover both urban and provincial universities, a range of sizes, universities that were thriving in terms of finance and student numbers, and

others that were under pressure on these. The German universities covered both East and West *Länder* reflecting the unified Germany, and the United Kingdom sample included institutions in England, Scotland, Wales and Northern Ireland.

Having selected the universities and gained their agreement to participate, the next step was to select staff and students from the Education discipline. A sample of staff, matched in range of seniority, was identified at each institution, ensuring that in both the German and United Kingdom samples, the courses covered the range and types of education being provided in each country, and ensuring that their students were comparable in terms of their gender and age distributions. This was a complex task in the light of the differing structure of provision in the two countries, but the samples were balanced to ensure that the aggregate courses and students studied were indeed comparable. The structure of education provision differs in the two countries, as the following tables show:

Table 1a. **Types of course being followed in the United Kingdom**

Course	United Kingdom
PGCE	768 (51.6%)
B.Ed.	344 (23.1%)
BA and B.Sc.	372 (25.0%)
Not given	5 (0.3%)
Total	1 489 (100%)

Table 1b. **Types of course being followed in Germany**

Course	Germany
Teaching Preparation *(Lehramt)*	477 (48.4%)
Degree in Education *(Diplom)*	245 (24.8%)
Magister	239 (24.2%)
Not given	25 (2.5%)
Total	986 (99.9%)

As Tables 1a and 1b demonstrate, the nature of provision in the two countries is different in structure, although the aggregate provision studied in the two countries was similar. In Germany, no real difference is made between undergraduate and postgraduate programmes though this is changing because BA and MA courses are gradually being introduced so as to re-position Germany in the global market. Students on a Master's course *(Magister,* though not the same structure as the BA/MA one) are not serving teachers as they

might be in the United Kingdom, and in deciding upon the British sample in-service students doing Continuing Professional Development programmes were avoided as they would mostly have been qualified and experienced teachers, therefore not at all comparable to the Germans who were still technically on first degree courses. In the United Kingdom, some students were studying Education in connection with other subjects, in preparation for social professions, and some were studying it as a degree subject, without any declared intention to train as teachers. The majority, however, *were* preparing to be teachers. The most popular pattern of teacher education in the United Kingdom is the Postgraduate Certificate in Education (PGCE) to which no exact equivalent exists in Germany, because German courses are concurrent rather than consecutive (until the second, post-university phase). There was the added complication that certain types of PGCE and Bachelor of Education (B.Ed.) did not always give Qualified Teacher Status. However, the selected staff, and their courses and students were chosen to ensure that in aggregate, the samples studied in Germany and the United Kingdom were comparable in terms of gender and age, as demonstrated in Tables 2a and 2b.

Table 2a. **Numbers of students by country and gender**

Gender	United Kingdom	Germany
Male	332 (22.3%)	236 (23.9%)
Female	1 145 (76.9%)	749 (76.0%)
Not given	12 (0.8%)	1 (0.1%)
Total	1 489 (100%)	986 (100%)

Table 2b. **Numbers of students by country and age**

Age	United Kingdom	Germany
18-21	390 (26.2%)	167 (16.9%)
22-24	461 (31.0%)	446 (45.2%)
25+	618 (41.4%)	373 (37.8%)
Not given	20 (1.3%)	0
Total	1 489 (99.9%)	986 (99.9%)

All students requested to participate did so; all staff co-operated in the interview process, but a small number did not fill in the associated questionnaire. A sample of 90 was aimed for in each country; 87 in the United Kingdom and 82 in Germany completed both questionnaires and interviews, hence the response rate for both questionnaire and interview success was 96% in the United Kingdom and 91% in Germany. Assurances about confidentiality were given in relation to institutions, staff and students. The questionnaires were normally distributed in

class, usually by the researcher who visited each institution in person. They consisted mostly of statements that the students had to rate by checking a five-point scale from Strongly Agree to Strongly Disagree with a neutral option in the middle. Chi-square tests were applied to determine whether the differences were significant between countries. There was a measure of summative judgement at the end (course satisfaction). The results in the main study are shown in percentages, with the categories Strongly Agree and Agree merged, and Disagree and Strongly Disagree also merged.

Presentation of the results

Collegiality and the unity of teachers and learners

1. To what extent are human relationships important to students and staff within their higher education institutions?

The relationship is more important to the staff than to the students themselves, and the British students feel much more strongly than their German counterparts that their lecturers make an effort in human terms. Whereas high percentages of staff in both countries claim that the students consult them about personal problems, over half the German students actually deny that they do so. This could be partially due to the fact that they are on average older, and perhaps less dependent on their teachers. There may be a tendency for *all* staff to give much higher ratings than students to statements that reflect favourably on them and their work: thus we see that some of them do claim that they invite students to their home, whereas few of the students indicate that this actually happens! It is clear that the German academics *do* care about their students (86% of them regard the relationship as "very important"). Yet almost half of the students disagree that the staff "try to achieve a good relationship" with them. The goodwill of the teachers is not being effectively communicated to the learners.

2. How is academic engagement embedded within the human framework?

Table 4 further explores student perceptions of their role relationship with staff. Surprisingly, it is the British students who agree more strongly than the Germans that they and their lecturers are "joint seekers after knowledge" (United Kingdom 57%, Germany 21%), although this typically Humboldtian item might have been expected to appeal more to Humboldt's compatriots. Slightly more of the German students disagree that they have sufficient access to their teachers when they need it academically, and just over half, compared with three quarters of the British students, endorse the statement that the university is a good place to get to know people academically like themselves. This item was intended to tap perceptions of the university community.

Table 3. **Unity of teachers and learners: collegiality**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
Students: A good interpersonal relationship with my lecturers is very important to me	United Kingdom	67.1	27.0	5.9	P = .000
	Germany	37.2	34.8	28.0	
Staff: The human side of the relationship is very important to me	United Kingdom	97.7	1.1	1.1	P = .02
	Germany	86.3	10	3.8	
Students: Most lecturers try to achieve a good inter-personal relationship with students	United Kingdom	68.8	23.8	7.4	P = .000
	Germany	19.6	33.2	47.2	
Students: My lecturers sometimes invite me to their homes	United Kingdom	4.4	4.3	91.3	P = .005
	Germany	2.5	2.8	94.8	
Staff: Sometimes I invite the students to my own home	United Kingdom	21.8	8	70.1	P = .55
	Germany	16	11.1	72.8	
Students: I would never consult lecturers about personal problems	United Kingdom	36.0	29.2	34.8	P = .000
	Germany	57.0	19.6	23.4	
Staff: My students sometimes tell me their personal problems	United Kingdom	92	3.4	4.6	P = .003
	Germany	71.6	12.3	16	

Table 4. **Academic engagement within the human framework**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
Students: I have ready access to my university teachers when I want to discuss my academic work	United Kingdom	64.4	26.6	9.0	P = .011
	Germany	60.6	26.5	12.8	
Students: Lecturers and students are joint seekers after knowledge	United Kingdom	57.0	34.1	8.9	P = .000
	Germany	21.0	37.3	41.7	
Students: The university is a good place to get to know people who are similar to me	United Kingdom	75.1	19.3	5.6	P = .000
	Germany	51.1	30.8	18.1	

Liberal education and instrumentalism

3. Do the students and staff in the present study value intellectual over holistic personal development?

Table 5 shows that greater proportions of both the British staff and students agree that predominant purpose of the university is to develop them intellectually (United Kingdom 40%, Germany 24%). A significantly higher percentage of the United Kingdom than of the German students find their course stimulating and challenging. Greater proportions of both German staff and students expect above all that it should promote their human development. So there is evidence in this question cluster that while personal development is important to the majority of students, especially in Germany, it is the British (both staff and students) who have more of a leaning towards the intellectual orientation.

Table 5. **Student attitudes towards personal and intellectual development**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
Students: The university exists pre-dominantly in order to develop me intellectually rather than emotionally	United Kingdom Germany	39.5 23.5	32.3 28.9	28.1 47.7	P = .000
Staff: The university exists to develop the students intellectually, rather than emotionally or personally	United Kingdom Germany	35.6 26.3	8 15	56.3 58.8	P = .224
Students: What I expect *above all* from the university is that it should promote my human development	United Kingdom Germany	50.7 58.2	38.6 27.9	10.7 13.8	P = .000
Staff: What I expect of the university *above all* is that it should promote the personal development of the students	United Kingdom Germany	17.4 48.1	15.1 30.9	67.4 21	P = .000
Students: I find my course intellectually stimulating and challenging	United Kingdom Germany	77.4 55.5	16.8 29.9	5.9 14.6	P = .000

4. In what measure do students manifest an instrumental attitude towards their course?

Table 6 shows that the British students are more materialistically oriented: they are much keener to earn substantial salaries when they start work, and generally more anxious to quit the university and start earning. The Germans, on the other hand, manifest a greater endorsement of socially useful work, so there is some evidence here that the British students are more materialistic and less idealistic than their continental counterparts.

Table 6. **Instrumental orientation of students**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
It is very important to me to earn a substantial salary later on when I get a job	United Kingdom Germany	49.4 34.5	32.3 38.8	18.3 26.8	P = .000
It is important to me, when I get a job, to do work which will be useful to the community	United Kingdom Germany	73.9 80.4	20.7 15.8	5.3 3.8	P = .001
I can't wait to leave university and earn money	United Kingdom Germany	43.4 30.1	32.6 24.7	24.0 45.2	P = .000

Interest in research: unity of research and teaching

5. How positive are the students' attitudes towards research?

Because the German university was originally the "research university", it may come as something of a surprise to find from Table 7 that significantly higher percentages of the United Kingdom than of the German students believe that their course gives them an induction into research, would like to go on to some form of higher study and would be attracted by the academic

Table 7. **Attitudes towards research**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
Students: My course provides me with an induction to research	United Kingdom	43.4	33.4	23.2	P = .004
	Germany	39.9	30.9	29.2	
Students: Later on, I would like to do a doctorate or some form of research	United Kingdom	31.0	24.9	44.0	P = .000
	Germany	22.9	24.6	52.5	
Students: My lecturers are more interested in their research than in their teaching	United Kingdom	11.3	27.1	61.6	P = .000
	Germany	61.9	30.4	7.7	
Staff: Research is more important to me than teaching	United Kingdom	23.0	6.9	70.1	P = .000
	Germany	16.3	32.5	51.3	
Students: I would like to become an university lecturer myself	United Kingdom	21.5	22.1	56.4	P = .000
	Germany	9.6	16.7	73.7	
Students: I am very interested in my subject	United Kingdom	86.5	11.8	1.7	P = .000
	Germany	80.1	16	3.9	

profession themselves. High proportions in both countries are very interested in their subject. Over 60% of the German students (but only 11% of the British) believe that their lecturers are more interested in their research than in their teaching, though this does not chime with the reality: more *British* staff actually agree that research is more important to them than teaching (perhaps encouraged in this priority by the RAE), but this is just in comparison with their German counterparts. The majority of the staff *rejected* the idea that research takes precedence over teaching, and this was especially true in Germany. Yet there are reservations on the part of the British staff about the academic balance of their course programmes. When they were posed a country-specific statement (not tabulated), "Sometimes I think that our students are not being sufficiently challenged intellectually", almost 54% agreed, and 45% agreed that there was "[t]oo little academic input in British teacher training course".

Choice, quality, satisfaction and institutional loyalty

6. How far have the students been able to exercise choice in the selection of their HEI?

As Table 8 indicates, more UK than German students were able to access their first choice of university. In untabulated additional data, it emerges that far more British than Germans were first generation university (United Kingdom 70%, Germany 54%). About one third of British but two thirds of German students wished that they had chosen a different university.

Table 8. **Student choice of university**

Statement		United Kingdom (%)	Germany (%)
Students: I was able to get into my first choice of university	Yes	77.5	66.2
	No	22.5	33.8

7. To what extent do the students perceive the quality assurance regime as functioning effectively within their HEI?

More British than German students felt that teaching evaluation questionnaires were regularly administered by their lecturers, but despite this fact, only 30% of them believed that they had enough influence upon decisions in their subject area (Table 9). Few German students agreed that their HEIs had "suitable procedures for quality assurance", and almost half of them (compared with 20% of the British) felt that their lecturers were lacking in professional accountability.

Table 9. **Student perception of quality assurance**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
Teaching evaluation questionnaires are administered regularly by our lecturers	United Kingdom	41.6	26.2	32.2	P = .000
	Germany	16.4	22.2	61.5	
Students have enough influence on decisions in their subject areas	United Kingdom	30.0	43.7	26.4	P = .000
	Germany	6.8	34.7	58.4	
My university has suitable procedures for quality assurance in teaching	United Kingdom	57.4	34.7	7.9	P = .000
	Germany	7.4	38.8	53.7	
Student evaluation of teaching has very little influence on the quality of teaching	United Kingdom	17.6	49.1	33.3	P = .000
	Germany	29.1	42.6	28.3	
Our lecturers do not seem accountable to anyone for the way they do their work	United Kingdom	19.6	42.3	38.1	P = .000
	Germany	46.6	32.0	21.4	

8. How satisfied are the students with their courses?

In a marketising HE system, even a quasi-market, student satisfaction is important, and may have an effect on the viability of institutions by affecting recruitment trends and alumni behaviour. In the present study, almost 92% of the British students rated their course Good to Very Good (*cf.* 62% in Germany, Table 10). One third of the German students rated their course Moderate. Despite the positive attitude of the United Kingdom students, few would consider becoming alumni donors, thus much remains to be done to capitalise on student satisfaction once it has been achieved. This would help to compensate for decreasing state funding.

Table 10. **Summative judgement of student satisfaction**

How would you rate your course?	United Kingdom	Germany
Very good	41.4	2.5
Good	50.2	59.8
Moderate	7.4	33.0
Not very good	0.6	2.62
Unsatisfactory	0.4	2.1
Total	100	100

9. Would students be prepared to make financial donations to their HEI from future earnings?

In the 2003 British White Paper (para. 7.16) a desire is expressed to build a culture of giving to HEIs, and German policy makers too are conscious of this as a desideratum. Table 11 shows that over 70% of the British students were proud of their institutions compared with only one fifth of the German sample, and 82% thought that its good name would help them to build success later in life (*cf.* 18% in Germany). More UK than German respondents would recommend their course to a friend. Quite high proportions of respondents in both countries (less than 16%) were "uncertain" whether they would still choose the same course if it were to do over again; the majority of people thought that they had chosen the right course and would recommend it to a friend, but twice as many Germans as British respondents thought that they had chosen badly.

Table 11. **Students' enthusiasm for their institutions**

Statement	Country	Agree	Uncertain	Disagree	Chi-square
If I had to start all over again, I would still choose the same course	United Kingdom	74.1	16.7	9.2	P = .000
	Germany	62.0	18.1	19.8	
I am proud of my university	United Kingdom	71.5	23.8	4.7	P = .000
	Germany	20.8	36.4	42.7	
I think the good reputation of my university will help me be successful in later life	United Kingdom	81.9	14.4	3.6	P = .000
	Germany	17.5	31.9	50.7	
I would consider contributing money to my university when I am earning	United Kingdom	14.3	32.2	53.5	P = .000
	Germany	5.0	21.3	73.7	
I would recommend my course to a friend	United Kingdom	73.2	18.0	8.7	P = .000
	Germany	53.9	25.3	20.8	

Discussion

The German students' relative indifference to the human dimensions of their relationships with staff certainly runs contrary to the traditional concept of the unity of teachers and learners, and may be due to a number of different factors. Class numbers and staff-student ratios are generally higher in Germany than in the United Kingdom, and this makes the establishment of human relationships more difficult. Of course, there *are* ways of coming closer to staff, for example by getting a part-time job as a student helper, and at the stage when dissertations are being prepared, small group presentations and discussions are held, after which there is often informal socialising. However, although the staff hold regularly-scheduled studies advice sessions *(Sprechstunden)* the fact that numbers are so high may discourage the students from even expecting personal contact. Moreover, German students leave school later than in the United Kingdom, and begin their studies later; many of the men do military or community service, and people of both genders sometimes come into university after having done an apprenticeship. These facts may make them less dependent upon their lecturers, but it is still disquieting that nearly half of the students in this study reject the statement that their lecturers try "to achieve a good relationship" with them. This harsh judgement is in conflict with the lecturers' own perceptions – that the human side of their relationship with the students' matters very much to them – and it would be important in future organisational development for German HEIs to capitalise upon this fund of good will. It would be good for the lecturers' morale if they could honestly believe that their students were satisfied with the teaching and management within the institutions.

The findings for the UK students that their relationship with lecturers is "very important" and their perception that most staff try hard to work on this relationship are consonant with those of Ahier *et al.* (2003) who discovered that their British student respondents had a strong sense of engagement with each other. They term this "sociality", and regard it as important for the development of citizenship which arises from the inter-personal engagement and exchange of views. Though much of the sociality of student life takes place in the private spaces of student accommodation, the university as a whole functions as a site of interconnectivity and communication. In fact, the authors claim that "a common mode of sociality structures the collegiate space of the university" (*ibid.*, pp. 137-138), and that the language used in their study was more that of mutuality than of privatised calculation. Sociality is important for a democratic citizenship, and does not seem to have been destroyed by "the market".

The perception of human relationships within an institution is one thing, but the aims of higher education are another thing, and it is when we turn to the balance between personal and intellectual development that the persistence of

Bildung as an ideology asserts itself. German staff and students endorse human development as an overriding goal of higher education to a significantly greater extent than their British counterparts. Both staff and students in the United Kingdom emphasise the intellectual over the emotional as aims of higher education, and the UK students are notably more interested in their subjects and in possible research, and are even more amenable to reproducing the academic profession than their continental counterparts. UK students are also more materialistic and instrumental in their expectations of university. Of course, the extent to which students *believe* their course prepares them for research may not correspond to the *real* demands of research, but in principle they are favourably disposed towards it. The market does not seem to have destroyed this interest, but the British students may have a different concept of "research" to that of the Germans. Gibbons *et al.* (1994) put forward a distinction between Mode 1 and Mode 2 knowledge in which the former is a traditional, disciplinary way of creating knowledge tested against earlier experience and with truth as the touchstone; the latter is multidisciplinary and problem-based, and tested against the criteria of usefulness and relevance. An analysis of German programme structures, for example for teacher education, suggests that it fits more into Mode 1 whereas the British syllabuses fit into Mode 2; but further investigation would be necessary to establish epistemic differences in the United Kingdom and Germany, and it is highly probable that the introduction of BA and MA degrees in Germany may bring about changes in the concept of "research" and knowledge. Mode 2 may perhaps be less "noble" than Mode 1, but it does seem to have a motivating effect upon students.

In relation to choice of institution, it is interesting to see that though UK universities select their students, sometimes applying stringent entry criteria, yet it is the British respondents who feel more strongly than the German students that they are able to get into their first choice of institution; this is despite the constitutional guarantee in Article 12 of the Basic Law that all Germans have the right to free choice of career, place of work and *place of education*. In Germany, it has now become legally possible for institutions to select their students; this is intended to be a step along the path of institutional profiling and differentiation which are at present under-developed. Until recently, German policy makers were unwilling to admit publicly that their universities differed in quality, and paid lip-service to the fiction that they were all equally good, despite evidence to the contrary. The promotion structures for staff were so arranged that to achieve promotion or a Chair, one had to move elsewhere, and this naturally loosened the bond of loyalty between the individual and the institution. Gradually, however, the variability of quality is being recognised. A state-funded Excellence Initiative has been launched to develop a number of HEIs capable of competing in worldwide league tables. But

it is still disquieting that so few of the German students in the present sample feel any sense of pride in their institutions, or think that it will give them a useful imprimatur in later life.

Although the British respondents are much more satisfied with quality than the German students, here it is necessary to enter a caveat. As Diana Green (1994) points out, student satisfaction is used merely as a *proxy* for quality; satisfaction is not in itself a proof that what the students enjoy or desire is necessarily of high quality. Nevertheless, the British students in the present study are sharply conscious of the reputations of their universities. This implies that, in keeping with a market ethos, they are being influenced by information about the institutions when they come to choose a university and are manipulating choice. The UK staff may, however, be paying a heavy price for the student satisfaction. In additional data (untabulated), 83% of British staff respondents (but only 17% in Germany) feel over-burdened by quality assurance procedures; 77% compared with 56% in Germany agree that they have "far too much to do"; 61% compared with 46% of the Germans claimed to feel "quite stressed" by their work; and the British are deeply conscious of a decline in their status (in the United Kingdom 81.4% and in Germany 58.5% agree that the status of university teachers has fallen in recent times). These findings suggest that satisfaction of British students is being achieved at the expense of the staff. This is surely one of the most important findings of the study. It represents a serious imbalance within the system, and is at variance with the more positive model of "collegial entrepreneurialism" put forward by Clark (2004).

Yet, despite the British students' positive ratings of their HEIs, only a small proportion of them would consider contributing money as *alumni*, though this is a policy goal of the government, and in keeping with the long-term strategy of marketisation and of reducing dependence on public finance. Clark (*ibid*., p. 154) points out that as state support decreases, private gift-giving becomes an increasingly essential component of continued academic success. The basis of institutional loyalty is particularly weak in Germany, and as it stands cannot be conducive to a culture of giving. Much more needs to be done to develop it, both for the greater happiness of the students within the system and for the prosperity of the HEIs. Some observers might seek to use the fact that German students are on average older than British students as a way of explaining their more distant attitudes towards their academic staff, but it must not be forgotten that *alumni* bodies consist of people of all ages, and that wealth often goes with advancing age, so the age of the student body is not in itself a sufficient or satisfactory explanation for indifference towards an HEI. Clark (*ibid*., pp. 140, 164) shows that at the top-rated Massachusetts Institute of Technology, the staff-student ratio is 1:10, and that it has 910 staff compared with 340 at a leading Swiss institution, the Federal Institute of Technology Zurich (ETHZ). An

improvement in the German staff-student ratio is a prerequisite for the more personalised treatment of students that might lead to them becoming loyal alumni. The attitudes of the staff are sufficiently positive to be conducive to good relations. But this is not by itself enough. Frances (2003) in discussing the "privatisation" of US universities (*i.e.* reduction of state support) reveals the complicated, sometimes expensive, mechanisms for encouraging it. The top universities have large bodies of staff whose primary task is to promote donations (Harvard has about 140 such persons); they are well-trained, some being members of the Council for the Advancement and Support of Education (*www.case.org*). Public advertising is used to stimulate donations (with slogans such as: "A mind is a terrible thing to waste"), class leaders are organised to promote giving among *alumni*, tax policies are conducive to private giving and there exist specially tailored financial products for the same purpose.

In summary, it may be stated that though the British students were more materialistically and instrumentally oriented than the German respondents, they also seemed to enjoy a more satisfying quality of human relationship and intellectual experience. This, however, ran counter to the experience of their teachers in respect of workload, stress, professional status and overload by excessive quality assurance demands. More care needs to be taken in the United Kingdom to make staff conditions of work just as good as those of students and avoid an inverse relationship between staff and student satisfaction. More needs to be done in Germany to strengthen institutional loyalty which is at present weakly developed. This would be important for the happiness of students and staff within the system, as well as for the more mercenary "market" purpose of creating *alumni* who will give money to the HEIs on the American model, thereby lightening the financial burden on the state.

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E-learning: A Fresh Look

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In this paper the authors describe the outline of an analysis of disruptive technologies presented by Christensen in his book, The Innovator's Dilemma. *They go on to argue that the analysis can be applied to the practice of e-learning as it has been developed in higher education in the United Kingdom, and possibly elsewhere. They suggest that current moves away from fully developed e-learning and towards "blended learning" can be understood in terms of Christensen's analysis, and that the move may be an indication that large, established organisations have difficulty in adjusting to disruptive technologies. They conclude that much research needs to be done in the area of e-learning, especially small scale studies of how e-learning can be used away from the established culture of formal education. This is an approach to market research that is also contained in Christensen's analysis. In summary, they argue that Christensen's analysis offers some important insights into the process of adopting e-learning solutions in higher education, and also suggests some fruitful directions for future research.*

Introduction

In his book, *The Innovator's Dilemma*, Clayton M. Christensen (2000) sets out an analysis of the entry of new technologies into competitive markets. The question from which Christensen started was how large, effective and market-responsive corporations could miss opportunities provided by new technologies, and see their markets cut away by new, small companies that specialised in those same technologies. Although his analysis focused on changes in the manufacture of computer hard disk drives, *The Innovator's Dilemma* includes examples from other areas including steel smelting, retail marketing and manufacturing.

Perhaps surprisingly, Christensen indicates that an answer to this question is that large companies may fail *because* they are market-responsive and provide what their customers demand. But he went beyond this simple solution to look at issues of corporate culture and strategic priorities that led to corporate failure when specific types of technological innovation are concerned. And this led Christensen to make specific recommendations as to how corporations might respond to technological innovations in a way that was likely to maximise their success.

Christensen's analysis appeared to us to address directly a range of issues in e-learning, from the dramatic failure of the United Kingdom eUniversity (UKeU) and several other e-learning initiatives in differing countries, to the advisability of "blended learning" approaches to e-learning and the way in which e-learning was being used in more traditional institutions. This paper is the result of our reading of Christensen's book and our own experience of e-learning in a university in the United Kingdom. Our goal is to set out as simply as possible Christensen's framework of analysis, to apply that framework to e-learning as it is currently understood in higher education principally but not exclusively in the United Kingdom, and to point to possible areas of future development, especially in research into e-learning. While our examples are mainly drawn from the United Kingdom, we will reflect on more general implications.

The argument is developed in four sections. In the first section we address the identification of technologies that Christensen labels "disruptive technologies". That is followed by a section that examines corporate cultures and the reasons that make it difficult for large corporations to adopt disruptive technologies successfully. The third section is devoted to Christensen's

prescriptions for corporations that wish to engage effectively with new technologies, and examines whether the absence of the measures that he suggests can help to explain the relatively slow development of e-learning and one or two rather spectacular failures in the field. And in the concluding section we will draw the discussion to a close by suggesting areas where further work would be desirable.

Disruptive technologies

Christensen (2000, pp. 10-19) draws a distinction, crucial to understanding his analysis, between "sustaining technologies" and "disruptive technologies". A sustaining technology is one which is incremental, which increases the efficiency of a technological application, without radically altering the contours of the field in which it is applied or the market where it is sold. In contrast with this, a disruptive technology is one which replaces an existing technology, and in so doing changes the range of applications for technology and the market where the technology is sold. This is probably best addressed through one of Christensen's examples (2000, pp. 17-20).

Between 1975 and 1978 there were few computer manufacturers, and they made mainframe computers. Long-term memory was provided by 14-inch hard disk drives, which were manufactured by a number of companies supplying the computer manufacturers. Between 1978 and 1980 small, new companies started manufacturing 8-inch hard disk drives, but there was no market for these among mainframe computer manufacturers (or mainframe computer users). The new manufacturers of the smaller disk drives sold them to companies that were manufacturing mini computers and work stations. The quality of 8-inch drives was improved rapidly, and the costs fell because the level of production rose rapidly, to the point where the performance of 8-inch drives represented better value for money, and sometimes absolutely better performance, than 14-inch drives. At that point the established manufacturers were obliged to introduce 8-inch models or go out of business. In some cases they did both.

The technological features of this cycle, which was repeated several times in the disk drive business, are that a new technology was introduced into a market niche where one aspect of the new product (in this case size) which was irrelevant in the original applications, or even seen as a disadvantage, would be seen as an advantage. Subsequent experience of manufacture and marketing led to improvements in the application of the new technology, to the point where it could start to remove the market of the original technology, starting at the low end of the market which is particularly cost sensitive. Finally the new technology completely replaced the old technology, and whether established companies chose to transfer to the new technology or not, they had already lost their position of market dominance.

The cultural aspects of the cycle are perhaps even more instructive. One can imagine the hypothetical sales pitch of an 8-inch drive manufacturer trying to sell their product to IBM in 1979: "We can offer you a new type of disk drive. It is not as good as the one that you are currently using, and it costs more, but it is smaller". In the existing market this was never going to work. It could only be successful if a market could be found where a smaller disk drive would be seen as an advantage. Fourteen-inch drive manufacturers who asked their current customers whether they wanted the new technology would have been told they had no use for it. Even though 14-inch drive manufacturers could have adopted 8-inch disk drive technology, they had no incentive to do so, at least as far as satisfying the demands of their current customers were concerned.

The overall lesson of this and other examples from Christensen is that effective, market-responsive companies are extremely effective at adopting sustaining technologies, but can make a transition to disruptive technologies only with great difficulty.

The question of whether e-learning is a disruptive or a sustaining technology is clearly the first question that needs to be addressed in applying Christensen's analysis. Unfortunately, this is by no means an easy question, because whether a technology is sustaining is not the same as whether organisations are trying to use it in a sustaining way. There is plenty of evidence from the field of education that potentially disruptive technologies have been used as sustaining technologies. In 1939 Lauwerys argued that film and radio could be used to achieve new educational objectives that could not be achieved with books and blackboards (Lauwerys, 1939, cited in McLean, 1981, p. 78). Notwithstanding that, at least until the advent of Nuffield science in the United Kingdom and the classroom use of film-loops, film and radio were largely used to present material that had previously been presented effectively in print or on blackboards. Indeed, the history of education would appear to be a history of innovations, from the printing press to the interactive whiteboard, that had almost no impact upon what happened in schools and universities. That ability to treat all technologies as sustaining technologies may be part of a wider story.

However, there is clear evidence of educational institutions following their current customers up-market as the needs of those customers grow. Christensen (2000, pp. 93-95) shows that companies have a positive incentive to move towards the top end of the market, where their profit margins will be larger, and where, generally speaking, they are dealing with existing customers whose demands have risen. In the educational context, once "customers" have achieved a Higher National Diploma, the institution can provide a bachelor's degree for them, and after that postgraduate studies. This phenomenon, which has been widely recognised and described as "academic drift" is well

known in the field of post-compulsory education (Pratt and Burgess, 1974). However, it may be the case that academic drift is a specific case of a more general tendency of organisations to follow their existing market rather than seek out new market niches.

Producing a definitive answer as to whether e-learning is a disruptive technology depends upon finding a market niche where it can be used, and where aspects that are seen as neutral or as disadvantages by traditional users are seen as positive advantages by a potential new users. This is an aspect of future research that will be returned to later when we deal with Christensen's recommendations on how to deal with disruptive technologies. For the moment it may only be possible to note that the question may not be symmetrical; it may never be possible to know that something is not a disruptive technology, but only possible to recognise that it is a disruptive technology when its application has produced a threat to users of traditional technologies.

Corporate cultures

Initially the market for a disruptive technology will be small. It is therefore unlikely that large organisations will be excited by, or committed to, large successes in very small markets, which are necessarily likely to be a small proportion of corporate activity. In addition, as disruptive technologies eat away at the low end of the market first, where profit margins are squeezed and competition fiercest, companies that are engaged in existing technologies can generally protect profits in the short term by retreating upmarket. The combination of these market pressures on established companies make it difficult for them to invest effectively in disruptive technologies. Christensen argues that except in very special circumstances two technologies cannot co-exist in a single organisation.

Where large corporations have to decide whether to invest in a sustaining technology or in a disruptive technology, they will almost invariably invest in the sustaining technology. The sustaining technology will provide benefits for the large market that they already have direct access to. It will improve their existing products and allow them to move upmarket. And it will not require any major shifts in the values of managers within the organisation. The result will be that where an organisation tries to run two technologies in tandem, resources will be transferred from the disruptive technology to the sustaining technology.

By the same token, small companies will have an advantage in implementing disruptive technologies because small market gains in small and developing markets can still be large enough to drive the priorities of the organisation. Growth in markets which would seem trivial to a large corporation (and might even be interpreted as "no demand" by large corporations) can be major successes to small companies.

Christensen (2000, pp. 125-132) cites a number of examples where companies have tried to incorporate two parallel technologies, and have failed because resources have been moved from the disruptive to the sustaining technology. Key staff have been transferred. Performance norms have been applied inappropriately to both processes. And in the end, the disruptive technology has been abandoned.

In e-learning similar phenomena may be observed. E-College Wales (ECW) was established at the University of Glamorgan as a vehicle for the delivery of distance learning courses, mainly from the University of Glamorgan Business School. ECW was therefore closely linked to the activities of the business school. The courses that were developed for ECW were upmarket (*i.e.* technologically enhanced) versions of programmes that were available by traditional means on campus. The university, which makes educational provision for nearly 20 000 students, set ambitious targets for recruitment to ECW. The staff of ECW worked closely with staff from the business school.

After three years of operation, ECW had recruited over 1 000 students onto programmes, a considerable success in terms of e-learning programmes. But this was not enough to register as a major success at the level of the university, nor enough to satisfy the whole institution's need for growth and expanded recruitment. A number of staff who had been employed by ECW had been tempted to transfer to other projects within the business school; secure medium term prospects may have helped to encourage them to make decisions which make perfectly good sense to individuals and the university, but which drain resources from ECW. At the end of the four year project, the university needed to make decisions about the future of e-learning. It has been decided to move from e-learning in its pure form, and to concentrate on the core business (*i.e.* students on campus) enhancing their experience with blended learning where possible. Blending different approaches to learning is not a new idea, in business schools traditionally a variety of pedagogic approaches have been used, for example lectures, seminars, tutorials, case studies, role play, residential weekend course, adventure training and action learning groups. The difference now is that information technology and the development of virtual learning environments are used to support the learning process.

This pattern of a disruptive technology losing out in an established organisation matches almost point for point Christensen's description of Woolworth/Woolco's efforts to move away from their traditional stores and into discount marketing, followed by their subsequent decision to consolidate on a more traditional marketing model (Christensen, 2000, pp. 128-129). Similar analyses may be made of e-learning in other institutional settings, such as the Open University. Likewise the Netherlands have invested in the use of information technology in higher education. Wopereis *et al.* (2005,

p. 681) note that "Unfortunately, those highly funded initiatives often result in short-lived or local success or outright failures".

We have mentioned above that Christensen does not argue that such a course of development is inevitable, but that disruptive technology can only flourish in an established organisation in exceptional circumstances. The main feature of the successful case is that the disruptive technology is placed in the care of a small, subsidiary unit, completely isolated from the main culture of the organisations, and preferably physically remote from the main base. One of the examples that Christensen gives is of Hewlett-Packard's ink-jet division, established as an independent sub-unit of the company, over four hundred miles away from the central operations of the company. The ink-jet division was able to make its own resource allocations and respond to its own market (initially for small, portable printers of lower definition) and flourish, to the point where it was eventually able to challenge its parent company for a major part of the mainstream printer market. Christensen (2000, pp. 133) describes this strategy as "survival by suicide".

We can see no current examples in e-learning where organisations are following such a strategy. Indeed, in higher education in the United Kingdom it might be impossible for such a strategy to be followed, as a university that established a sub-unit explicitly to deliver a lower quality of student experience at a lower price would invite critical and unwelcome scrutiny from the Quality Assurance Agency, the government's quality assurance body. Variable top-up fees introduced into England in 2006 may alter this situation, but these have not yet had that effect.

Dealing with disruptive technologies

Christensen argues that certain principles need to be followed in order to be successful in introducing a disruptive technology. The first and most important principle is to identify a market or application for the new technology where its apparent disadvantages do not count against it, and may even be advantages. Undoubtedly this is the most difficult part of his prescription, because it requires creative thinking and imaginative responses to possible market demand. The only way to develop such new applications is to experiment.

> "Because failure is intrinsic to the search for initial market applications for disruptive technologies, managers need an approach very different from what they would take toward a sustaining technology … [I]n disruptive situations, action must be taken before careful plans are made. Because much less can be known about what markets need or how large they can become, plans must serve a very different purpose: They must be plans for *learning* rather than plans for implementation." (Christensen, 2000, pp. 180-181)

Above all else, this means that large scale investment in disruptive technologies should be delayed until some experience of the emerging market has been gained, and some evidence can be adduced as to the likely size and profitability of the new application of technology. Companies that invest heavily in a speculative view of what the disruptive technology might do risk their future on a single possibility. Christensen therefore suggests that ventures into disruptive technologies should be made as cheaply as possible, and in the expectation that they will fail.

The second principle, already implied in the previous section, is that disruptive technologies should be based in units that are small enough to get excited about small successes. A whole institution with thousands of students may not be very impressed with recruiting ten students to a new course, but that recruitment, if from an entirely new group of potential students, might be life or death to a small department, not to mention the eventual impact that such a development might have for widening access.

And the third principle that Christensen (2000, p. 182) asserts is that of "agnostic marketing"; "that no one – not us, not our customers – can know whether, how, or in what quantities a disruptive product can or will be used before they have experience using it." This places those who think that they know, or have a commitment to a particular kind of use, at a positive disadvantage in preparing for the future employment of a disruptive technology.

While we cannot be certain whether such principles would lead to a more successful application of e-learning technologies in the field of education, we would argue that cases where these principles have been ignored and failure has followed are easily identified. Examples can be found of large organisations that require heavy investment to establish, but that have failed to recruit according to expectations and projections. A large number of early adopters of e-learning failed to attract and to retain sufficient students to sustain their operations. Nonetheless e-learning has been adopted across a number of UK universities, and in 2000 the government formed the UKeU in order to co-ordinate higher education's web-based courses and offer them globally. The UK government gave a GBP 62 million grant to set up the scheme. However by 2003 the UKeU had only attracted 900 students against a target of 5 000 and in 2004 the UKeU was disbanded. The UKeU is claimed to have failed because of its emphasis on the technology at the cost of meeting learner expectation and need. Sir Howard Newby, chief executive of the HEFCE (2004), the council funding students to English universities, concluded, "In hindsight it was clear that online learning on its own was not as popular as predicted and there had been a number of e-learning failures by universities in the United States [as well]". What students wanted was "blended" learning where online materials were backed up by conventional teaching.

The House of Commons Education and Skills Committee Report (2005) into the failure of the UKeU highlights some of these features. For example, it stresses that too much was invested in a high technology solution, when little was known about the market for e-learning. However, the authors' insistence that what current users want is blended learning and that they cannot understand why the UKeU was not pursuing a blended learning approach suggests to us that the committee itself may be trapped in a position of seeing e-learning as a supportive technology, and not be able to envisage other possibilities.

The Education and Skills Committee also noted that the UKeU was supply driven rather than demand driven. By that they mean that the imperatives of design all came from the educational suppliers rather than from those who would use the institution. It should be noticed that Christensen's analysis offers an interesting commentary on such a notion, given that companies that have been very closely oriented to their customers have failed to adopt disruptive technologies. Thus while we believe that the Education and Skills Committee is a useful source of data on the operation of the UKeU, we also believe that the analysis they offer is unsatisfactory, and can be improved with the use of Christensen's framework.

The UKeU is the most obvious example, although other large scale developments in e-learning, such as the Global University Alliance, have not been as successful as was originally anticipated. Similarly in the training market in the United Kingdom there is a move to blended learning solutions. Durbin (2004, p. 7) emphasised, "Despite the hype, e-learning did not catch on, but now companies are realising they can be efficient by combining classroom training with e-learning."

Likewise some education providers in the United States who had hoped to capture a global market in e-learning courses have been disappointed; these include Jones.Com, Western Governors University, Cardean University and Spring.Com. None of these colleges have met their expectations of growth in e-learning (Cooper, 2005).

The majority of initiatives in e-learning, and their evaluation, have been framed within the parameters set by traditional education. What has been offered are "modules", "courses" and "credit". It may be that there is a market out there for smaller "learning objects" and/or for other more flexible uses that we have not yet identified. Christensen's advice would suggest that we should be experimenting more actively with a wider range of possible uses and greater variety of potential users than we have currently embraced.

Conclusions

We believe, as we have presented here, that Christensen presents a framework that can be highly productive when used in an examination of e-learning as it is currently employed in higher education in the United Kingdom and elsewhere. We have outlined here some of the insights that his analysis offers, and we believe that a fuller examination of disruptive technology in higher education would be warranted by the findings that we have presented.

On the question of whether e-learning is a truly disruptive technology in the terms that Christensen describes we remain agnostic. A positive and definitive answer that it is would require identifying a market niche where its full potential could be exploited. But in the absence of that evidence, we believe that Christensen's analysis fits the pattern of development in e-learning so well that there is at least a *prima facie* case that it is a disruptive technology.

If that case is accepted, then there is a clear need for extensive market research. However, in making that recommendation we are clear that this is not market research as currently understood for sustaining technologies, but multiple, small scale experiments to investigate how people could, would and wish to use e-learning. We should put aside the idea that what e-learning can provide must be considered in terms of modules and courses, and look to how community groups, disadvantaged individuals and those not engaged in formal learning might wish to use e-learning. And in the pursuit of those experiments, those "plans for learning", we should look beyond those who already find their way into higher education for what is currently on offer. This could be a growth point for a radical new approach to widening access.

Some of this experience may already exist in the work programmes of small educational providers and private training companies that use e-learning as a medium. Traditional market research might, in those areas, be able to catch some indications of what might be successful in e-learning. However, we doubt that all of the possibilities have been explored, and we would recommend that small scale research in this area should be promoted.

We are also mindful of Christensen's demonstration that two technologies cannot comfortably co-exist within a single institution. The result will always be a pulling back of e-learning to the mainstream, an inevitable conclusion that what is needed is blended learning, even though that conclusion says more about the culture of universities than it does about the possibilities of e-learning. If the kind of market experimentation that we propose is to be located within a university, it would need to be contained within a small, independent unit that was funded and managed so as not to be dependent upon the priority setting within the parent organisation. One implication of that, which Christensen points to but we have not previously mentioned, is

that such a unit needs the unambiguous support of the chief executive (Christensen, 2000, p. 203).

The course of action we recommend is highly speculative and includes a number of risks. However, we are convinced that such a programme of research is important, indeed may be vital to the future of higher education. The overall conclusion from Christensen's analysis is that it is extremely difficult for established organisations to adopt and embrace disruptive technologies. A small number of organisations manage it, but a much larger number fail in the attempt.

If e-learning is a disruptive technology, then the next two decades will require a dramatic restructuring of higher education. We would prefer to see a planned transition in which universities learn how to implement e-learning rather than wait to be put out of business by new organisations that have been quicker to understand its uses.

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The Strategic Purposes and Significant Effects of Quality Assurance in German Higher Education: A Comparative Perspective

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This paper attempts to explain how the German higher education system strategically used quality assurance, through the new system of accreditation, to offer globally recognisable degrees such as the Bachelor's (Bakkalaureaus) *and Master's* (Magister) *degrees. We also discuss the types of effects that this strategy has produced on the current structure of the German higher education system. In order to strengthen this discussion, the fundamental impacts of quality-related funding on the system's structure are scrutinised.*

Introduction

According to Helga A. Welsh (2004, p. 360), "Policy and institutional change in [Germany] have traditionally emphasised "change through adaptation"; rather than radical restructuring. The emphasis on gradualism is more than a cultural preference for piecemeal approaches to reform. It is the outcome of multiple consensual features in which major veto players impose multilevel decision-making and compromise, as well as competition amongst the political parties that fosters conflict. This tension between consensual and majoritarian elements of policy-making marks the German political system." In spite of this traditional policy-making pattern, "Currently, the German higher education system is undergoing drastic reform" (Liefner *et al.*, 2004, p. 23). In particular, the introduction of Bachelor's and Master's degree courses into higher education institutions implies their fundamental restructuring.

The question that arises here is with regard to how this drastic reform could be initiated within the German political system.

The purpose of this paper is to explore the strategic purposes and significant effects of new quality assurance systems, in particular the new system of accreditation which was introduced into the German higher education system around the turn of the century. The argument is to deductively demonstrate that this accreditation system was strategically designed to persuade institutions of higher education to offer spontaneously new Bachelor's and Master's degree programmes. However, this strategy has a "side effect"; the accreditation system, in addition to a new system of performance-based funding, also encourages the restructuring of many universities of applied sciences (*Fachhochschulen*) from practice-centred to theory-oriented institutions placing them on the same footing as universities (*Universitäten*). This restructuring entails a problem – the probability of further dispersal of research grants among universities, although a serious shortage of these grants for each institution is already notable.

This paper comprises three sections. The first section will consider one of the reasons why foreign ideas of accreditation were distorted and how this distortion has influenced the structure of the German higher education system. The second section will look at the way in which the introduction of new performance-based funding allocation can affect this structure through a comparison with the British system of quality-related funding. The final section will draw the arguments together and seek to identify some conclusions.

Accreditation

Up to the early 1990s, in German higher education no explicit policy system of quality assurance, such as an accreditation system, was evident. As Helmut De Rudder (1994, p. 204) suggests:

> "Until recently, German policy makers, higher education leaders and professors did not see the need to institutionalise either quality assessment or systematic quality evaluation, as had become common in American higher education and as happened in some other Western countries."

De Rudder (1994, p. 203) argues that "one reason for the notable absence of a quality debate or a quality assurance policy in German higher education is that differences in quality within German higher education, in contrast, for instance, to American higher education, have not been very great within a given institutional type." He adds:

> "Indeed, in recent decades the general thrust and intention of higher education policy at both federal and state level has been to treat all universities or all polytechnic colleges (*Fachhochschulen*) as more or less equal, with the same standards for exams, the same entrance qualifications, the same curricula, the same overall level of funding, the same regulations governing appointments and promotions, the same salary scales, the same organisational structures, and the same basic conditions for researching, teaching and studying" (1994, p. 203).

Despite the clear separation of the *Universitäten* from the *Fachhochschulen*, this "equal" policy, for a long time, continued attracting public support.

Nonetheless, a new quality assurance system appeared in 1999, the time when the German Accreditation Council (*Akkreditierungsrat*) was established in Bonn, according to the Resolution of the Standing Conference of the *Länder* Ministers for Education and Cultural Affairs (*Kultusministerkonferenz*, KMK) – which had been adopted on 3 December 1998 (Berner and Richter, 2001). This Council is now a permanent independent institution, which operates nationwide to ensure quality of teaching and research in German higher education. The creation of a national accreditation system accorded with German legislatures' endorsement of two documents, the Sorbonne Declaration and the Bologna Declaration, which advocated that a European common frame for teaching and learning in higher education should be created.

In 1998, the ministers responsible for higher education in France, Germany, Italy and the United Kingdom ratified the Sorbonne Declaration. According to Helena Sebkova (2002, p. 239), this "Declaration expressed the view that Europe should not only be a continent of joint currency, banking, and economics, but also that it should be a Europe of knowledge, with a strong intellectual, cultural, social and technological base in which higher education institutions would serve as leaders in the process of this development."

In the next year, higher education authorities from 29 European countries concurred with each other on the fundamental principles of the Sorbonne Declaration, and issued the Bologna Declaration, which put stress on the shaping of the "European Higher Education Area" through achievement of the following six goals:

1. adoption of a system of easily readable and comparable degrees;
2. adoption of a system based essentially on two main cycles, undergraduate and graduate;
3. establishment of a system of credits;
4. promotion of mobility by the overcoming of obstacles to effective free movement;
5. promotion of European co-operation in quality assurance;
6. promotion of the necessary European dimensions in higher education (Sebkova, 2002, p. 240).

Nevertheless, for German governments at that time, it was not easy to achieve the six goals of the Bologna Declaration. Firstly, traditional degrees at German universities, such as *Diplom*, *Magister*, and *Staatsprüfung* in law and medicine, were not understood to be "easily readable and comparable degrees" in other countries, especially outside Europe. Secondly, German universities had no established concept of the "two main cycles, undergraduate and (post)graduate". Finally, the idea of "credits" was unpopular (Peisert and Framhein, 1995).

German legislatures had already been well aware of these problems. Indeed, in 1998 the 16 *Länder* governments reached agreement on the immediate establishment of the "Anglo-Saxon" structure of two consecutive courses: Bachelor's and Master's degree programmes (Berner and Richter, 2001). Nonetheless, they had no intention of constraining German universities to adopt such programmes, because of their respect for the autonomy of the universities that was also stressed in the Bologna Declaration (Sebkova, 2002). For that reason, the German governments needed to find tactics that would induce the universities to spontaneously do so.

It is conjecturable that one of those tactics could be the institution of an accreditation system in 1999, in addition to the creation of the German Accreditation Council in the same year. According to this Council (1999, p. 1), "The process of accreditation aims to contribute towards securing quality in higher education teaching and study by setting basic standards."

This accreditation system was, however, designed for securing the quality of Bachelor of Arts (BA) and Master of Arts (MA) degree courses only, not for that of traditional *Diplom* courses, even though "the introduction of BA and MA degree courses was initially conceived as an addition to the traditional *Diplom* degree courses offered in Germany" (German Accreditation Council, 2001, p. 1). All of

these traditional degrees continued to be "governed by federal framework regulations to guarantee the same level of qualifications in all *Länder*" (Berner and Richter, 2001, p. 248). This pattern would be slightly modified, as the German Accreditation Council (2003, p. 8) explains, "Since the beginning of 2003, newly-established *Diplom* and *Magister* degree courses in subject areas for which no framework examination regulations exist or where current framework regulations are outdated are also subject to obligatory accreditation."

In spite of this modification, the accreditation system was still not applicable to traditional *Diplom* courses.

Thus, the German legislatures who initiated this accreditation system did not accept the foreign idea of accreditation as a method to maintain and improve the overall quality of the German university system as a whole. Instead, as Heike Berner and Roland Richter (2001, p. 249) indicate, these legislatures welcomed it "as a steering instrument in the approval procedures of new Bachelor's and Master's programmes in Germany". The legislatures finally succeeded in stimulating the diffusion of BA and MA degree courses – although it was a very slow process – without violating the autonomy of the universities (Berner and Richter, 2001).

Even so, the co-existence of BA and MA degree programmes with traditional *Diplom* programmes helped to produce tension between universities (*Universitäten*) and universities of applied sciences (*Fachhochschulen*).

Fachhochschulen are higher education institutions that were upgraded from secondary schools for vocational education, such as colleges of engineering (*Ingenieurschulen*), as a result of the agreement between the *Länder* governments in the Federal Republic of Germany (West Germany) in October 1968. Candidates for *Fachhochschulen* did not have to acquire the *Abitur*, the general qualification for entering higher education (*allgemeine Hochschulreife*). The entrance qualification for a *Fachhochschule* (*Fachhochschulreife*) was sufficient for them (Gellert, 1997).

Other than requirements for entrance, the *Fachhochschulen* had several characteristics different from those of the *Universitäten*:

1. mostly vocational-oriented education was provided;
2. almost all study programmes were in the fields of engineering, agriculture, economics or design;
3. study courses were shorter and more structured;
4. professors' teaching loads were heavier;
5. research activities were not often required;
6. no doctoral courses were offered (Gellert and Rau, 1992).

Moreover, the *Fachhochschulen* conferred the *FH-Diploms* which were generally deemed to be equivalent of BA degrees, whilst the first degrees

gained at the *Universitäten* were usually viewed as equivalent to MA degrees (Klumpp and Teichler, 2004).

These gaps between the *Universitäten* and the *Fachhochschulen* are, however, gradually being bridged, partly because these institutions are both entitled to establish BA and MA degree courses. Despite the fact that the Accreditation Council made a distinction between applied (practical) and theoretical (research) BA and MA degree programmes, this does not mean that the *Fachhochschulen* are prohibited from offering any theoretical BA and MA degree courses (German Accreditation Council, 2001).

In Germany, the introduction of the accreditation system was thus conducive not only to disseminating BA and MA degree courses, but also to reducing the differences between the *Fachhochschulen* and the *Universitäten*. A problematic consequence of this reduction can be that some *Fachhochschulen* voluntarily started making attempts to convert themselves from cheap but good vocational-oriented institutions into expensive theory-oriented institutions with poor infrastructures.

The *Fachhochschulen* are highly appreciated as good vocational-oriented institutions in Germany, especially in industrial society. As the Federal Ministry of Education and Research in Germany (*Bundesministerium für Bildung und Forschung*, BMBF) (2002, p. 20) explains, "The special qualifications which graduates of *Fachhochschulen* offer correspond to the economy's need for specialists with higher education degrees who received vocational-oriented education and thus bring with them good skills for mastering the ever more complex tasks demanded in the industrial and service society." The BMBF additionally states:

> "In keeping with this trend, the economy has in the past repeatedly advocated a more differentiated system of higher education with a strong *Fachhochschule* sector. The demand for employees with a degree from a *Fachhochschule* has – according to the trade associates – continued to remain strong. Many companies make no distinction between degrees from a *Fachhochschule* or a university when hiring. Top and highest level executive positions are open to graduates of *Fachhochschulen*. The lowest level of unemployment for all educational groups is found among graduates of *Fachhochschulen*" (2002, p. 20).

As well as having such a high reputation, the *Fachhochschulen* are less expensive than the *Universitäten*, in terms of the average expenditure on teaching and research per student; this is shown in Table 1.

As can be seen, although in a few subject groups the *Fachhochschulen* are slightly more expensive than the *Universitäten*, in areas of natural sciences huge differences exist in expenditures per student between these two types of institutions.

Table 1. **Current expenditure (in EUR) of higher education institutions on teaching and research per student in Germany by subject group and type of institution (2001)**

Subject group	*Universitäten*	*Fachhochschulen*
Law, Economics, Social Science	1 988	1 884
Mathematics, Science	7 062	2 437
Human Medicine	28 363	–
Agriculture, Forestry, Dietetics	10 003	3 733
Engineering	7 688	4 018
Language, Cultural Studies	2 800	3 475
Art	2 744	3 925
Average	5 821	2 902

Source: Federal Ministry of Education and Research in Germany (2004), *Grund- und Strukturdaten 2003/2004*, BMBF, Bonn, p. 279.

These differences come from the fact that, whereas the *Universitäten* are spending considerable amounts of money on their scientific research activities, the *Fachhochschulen* are poorly "funded for research and their staffing establishments do not include top grade professors" (Williams 1996, p. 25). The differences are also due to the fact that "*Fachhochschule* teachers spend a much lower proportion of their time on research than their colleagues at universities" (Teichler, 1996, p. 101).

Because *Fachhochschule* professors have had – as compared to their *Universität* counterparts – inferior research conditions, even though the list of their requirements for appointment includes proof of special aptitude for research work, they understandably tend to possess aspirations for "academic drift" (drift towards theory-oriented institutions, comparable to the *Universitäten*) (Teichler, 1996, p. 99). For that reason, many *Fachhochschule* professors look on the adoption of BA and MA degree courses, especially the theoretical ones, as a good chance to promote such academic drift.

The next section includes a further discussion on how the academic drift *Fachhochschulen* is fostered, not only by the adoption of BA and MA degree programmes, but also by the initiation of the new performance-based funding systems that implicitly follow the British and US examples.

Performance-based funding

The major sources of revenue for German institutions of higher education are – apart from their own incomes – basic funds (*Grundmittel*) from the Federal and the *Länder* governments, in addition to external funds (*Drittmittel*) from research councils and foundations. These basic funds were, for a long time, almost evenly allocated to the institutions of higher education according to their types. As Klaus Schnitzer and Andrä Wolter (2000, p. 246) indicate:

> "The present procedure (before the reform) for basic state funding is traditionally based on actual needs. This is an incrementalist approach that takes as a starting point the staffing and equipment resources already available at the respective higher education institutions. Budget calculations are based on input-related formulae such as the number of students, the number of professional posts or teaching capacity."

However, when the fourth revision of the Framework Act for Higher Education (*Hochschulrahmengesetz,* HRG), which was a federal law to prescribe the general systems of German higher education, was made on 20 August 1998, the termination of this funding system was advocated. Article V of this new Framework Act (HRG, 1998, p. 5) specifies, "State funding for institutions of higher education is oriented towards performance achieved in research and education as well as in the fostering of the new generations of academics."

In response to this alteration in the purpose of funding, several *Länder* governments took active measures to make "budgeting more flexible [and to create systems of] performance-related resource allocation between and within the higher education institutions" (Schnitzer and Wolter, 2000, p. 246).

The creation of such funding systems was by no means new for European countries. For example, over one decade ago, the British government had already introduced a new system for performance-oriented distribution of research money on a competitive basis (Williams, 1992).

This British system of performance-based funding, as will be described later in this section, contributed to drawing a line between research-centred universities and education-centred universities, with the consequence that the government succeeded in checking the rapid rise in the research expenses of the new universities mostly upgraded from polytechnics. Analysis of this development provides a comparative perspective that is useful for examining the German situation.

British higher education used to have a binary system, with two different sectors – similar to current German higher education. One was the university sector, which was composed of institutions for scholarly research and academic education; the other was the non-university sector, which consisted mainly of polytechnics offering degree courses with a vocational emphasis (Kogan and Hanney, 1999). This binary system was eventually dissolved by upgrading of all the polytechnics and two colleges of higher education to universities, following the 1992 Further and Higher Education Act passed by the Conservative government (McNay, 1999).

About a decade before this dissolution, the Conservative government made consecutive announcements stating that it would cut down the amount of recurrent grant allotted to universities. This decision of the government had a crucial impact on the University Grants Committee (UGC). As Michael

Shattock (1994) points out, "… the UGC made it absolutely clear to universities that although it did not contemplate the closure of any university, it certainly envisaged the closure of courses and even whole departments. … It rejected any policy of levying an equal percentage cut across the system" (1994, p. 21). In 1984, this resulted in the UGC publishing a paper with the title "A Strategy for Higher Education into the 1990's", which stated, "We propose to adopt a more selective approach in the allocation of research support among universities in order to ensure that resources for research are used to best advantage" (para. 1.9).

In 1986, the UGC, which had long distributed its research funds almost on a per capita basis among the universities, implemented this principle of the performance-based distribution of research funding (Williams, 1988).

In 1989, the government disbanded the UGC, which had worked as an autonomous buffer agency between the governments and universities, and established the University Funding Council (UFC) and the Polytechnics and Colleges Funding Council (PCFC); this implies that emphasis changed from planning to financial control (Kogan and Marton, 2000). In 1992, accompanying the termination of the binary system, the UFC and the PCFC were replaced by the three Higher Education Funding Councils (HEFCs) established in England, Scotland and Wales (Lund and Jackson, 2000).

The UFC and later the HEFCs repeatedly received the same crucial advice. That advice was in favour of a heavy concentration of research funds in a small number of universities, on the assumption that the dispersal of research funds would diminish the overall quality of research in higher education. In accord with such recommendations, the UFC and then the HEFCs made their quality-related research (QR) funding increasingly selective.

According to the HEFC for England (2004, pp. 19-20), "Mainstream QR funds are divided between 68 subject areas (units of assessment). […] The 68 subject totals are distributed to institutions in proportion to the volume of research multiplied by the quality of research in the subject for each institution." In addition, "the quality of research is assessed in the RAE [Research Assessment Exercise]. The last RAE was conducted in 2001 and has informed funding decisions from 2002-03. In the last RAE, each institution was awarded a rating, on a scale of 1 to 5* (five star), for the quality of its research in each unit of assessment in which it was active."

These RAE ratings are judged by peer review (the evaluation of academic work by others who are working in the same field) (Henkel, 2000). How the RAE ratings in 2001 were connected with increase or decrease in the QR funding is shown in Table 2.

Table 2. **RAE ratings converted into funding weights for each unit of assessment (2004)**

Ratings	1	2	3b	3a	4	5	5*
Funding weights	0	0	0	0	1	2.793	3.362

Source: Higher Education Funding Council for England (2004), *Funding Higher Education in England: How the HEFCE Allocates its Funds*, HEFCE, Bristol, p. 20.

As can be seen, whilst a rating of 5* attracted over three times more QR funding than a rating of 4 for the same volume of research activity, ratings of 1, 2, 3b and 3a received nothing.

Furthermore, according to the HEFCE (2004, p. 20), "the Government's White Paper 'The Future of Higher Education' asked us to provide additional resources to the 'very best of the 5* department'. In 2003-04, we distributed an additional GBP 20 million for departments that achieved a 5* rating in both the 1996 and 2001 RAEs." Therefore, greater funding partiality is now apparent towards a limited number of world-class research universities.

Thanks to such selective funding of research, the Universities of Oxford, Cambridge and London (London School of Economics, University College London and Imperial College), where many subjects were awarded 5* or 5 ratings in both the 1996 and 2001 RAEs, enjoyed a considerable amount of the QR funds from the HEFCE (Morgan, 2004). By contrast, many universities, including even some of the older universities, attracted little funding on account of this selectivity (Bleiklie, 2000).

Within this allocation pattern, most of the new universities, whose initial RAE ratings were low, acquired almost no QR funds, and therefore found it difficult to develop their research activities, with the consequence that their low ratings remained unimproved (Williams, 1997). This vicious circle, or more appropriately, "determinist" circle, constrained them to choose to survive as education-oriented universities with little research activities – exactly as they used to be when they were polytechnics (Kogan, 2002).

Consequently, it has been suggested that the quality-related allocation of research funds forced former polytechnics to maintain their characteristics as cheap but good education-oriented institutions, at the same time as it assisted particular universities with the ability to do academic research at international level to attract most of the competitive research funds.

After the middle of the 1980s, councils to evaluate the quality of higher education were established in many West European countries other than the United Kingdom. For example, in France in 1985 the National Evaluation Committee (*Comité national d'évaluation*) was created as an independent organisation (Eicher and Chevaillier, 2000). In similar fashion, in the Netherlands in 1988 the Association of Dutch Universities (*Vereniging van samenwerkende*

nederlandse universiteiten) was founded (Plankeel, 2000). In Denmark too, in 1992 the Centre for Quality Assurance and Evaluation of Higher Education (*Evalueringscenteret*) was established (Thune, 1994).

The governments of these three countries resembled each other in their procedures for introducing the evaluation systems. Firstly, these governments moderately relaxed their restrictions on universities; secondly, in exchange for this relaxation, they demanded that each university should reform itself to improve the efficiency of its research and education, and hence should assume accountability for the results of these reforms; lastly, they induced the universities to accept educational and research assessment conducted by evaluation councils (Neave, 2000).

Following these precedents, in May 1993 the Joint Working Group of the German Federal and *Länder* governments (*Bund-Länder-Arbeitsgruppe*) first issued a "Benchmark Paper" (*Eckwertepapier*). This paper recommended reinforcing the autonomy and responsibility of higher educational institutions through a change in the higher education law, with a view to encouraging individual institutions to cope with various and variable educational needs in ways different from one another (Federal and Länder Working Group, 1993).

Next, in July of the same year the KMK issued a joint statement, with the Association of Universities and Other Higher Education Institutions (*Hochschulrektorenkonferenz*, HRK), entitled "The Implementation of the Structural Reform for Study" (*Umsetzung der Studienstrukturreform*). This joint statement advised adopting the idea of block grants (*Globalhaushalt*) to permit each institution to spend its money from the *Länder* budgets almost at its own discretion (Schnitzer and Wolter, 2000).

Finally, as already stated, in August 1998 the Framework Act for Higher Education was amended; its Articles V and VI promulgate the introduction of university evaluation systems and the institution of competitive funding distributions in accordance with the outcome of evaluations. In response to this proclamation, several *Länder* governments began to establish evaluating organisations that were independent of the governments and institutions of higher education.

German academics have not yet reached agreement on how to apportion funds competitively in proportion to the performance attained in educational activities. What measures of education evaluation should be instituted has been in dispute, because educational evaluation itself is an imported and unfamiliar concept (Schnitzer and Wolter, 2000). In contrast, research councils' practice of dispensing their research subsidies on a competitive basis is already rooted deeply in Germany (Konow, 1996).

One of the most influential research councils is the German Research Council (*Deutsche Forschungsgemeinschaft*, DFG), which is an autonomous

organisation (Stucke, 1999). Research assessment by the DFG is conducted through peer review – comparable to that of the HEFCs in Britain. As the DFG (German Research Council, 2001a, p. 3) itself explains, "[The] DFG uses peer review on all project grant applications. While mail review is commonly used for individual grants, panel review, often including site visits, is common for all forms of co-operative research."

What is important here is that, whilst the major objects of the British HEFCs' evaluation when deciding on their financial support are each subject in each institution (although this means that only submitted research staff in each subject in each institution are subject to the RAE), the DFG considers individual applicants and groups for joint research. Other German research societies (both governmental organs and private foundations) also distribute their research grants mostly in accordance with the assessment of individual applicants' research proposals and achievements in the past (Peisert and Framhein, 1995).

In the United States, where a parallel means of allocation is widely utilised, research and development (R&D) funds for higher education "are concentrated: the top 100 institutions account for over 80% of all academic R&D funds, the top 50 over 60%, the top 10 over 20%. The distribution of academic R&D across fields has remained essentially the same over the past two decades" (Gumport, 1993, p. 244). This striking concentration of academic R&D funds in particular universities takes place, because of the "Matthew effect, in which cumulative advantage helps the rich to become richer" (Gumport, 1993, p. 230).

This Matthew effect is cyclical: US universities are clearly stratified in status; the status of the university to which each applicant belongs is regarded as an important element in judging whether academic R&D funds should be awarded to these applicants or not; the higher the status which an institution enjoys, the more that the institution can save on the overhead costs of its R&D funds, and thus, afford to recruit distinguished scholars and to improve research equipment. Consequently, the stratification among the universities is reinforced.

In contrast to the case in the United States, the Matthew effect cannot be seen in Germany. This is because no marked ranking order among the *Universitäten* exists, and due to the common practice of forbidding institutions to seek support for the overhead costs from the research funds that their academics have attracted (German Research Council, 2001b).

Because there is no apparent ranking order among the *Universitäten*, when German scholars apply for research grants, it is not very important for many of

them which *Universität* they belong to – as compared with their British, Japanese and US counterparts. As Hans Brinckmann (1994, p. 194) points out:

> "The allocation of [research] money is determined by individual performance and funds are given to the individual researcher, not to the university. If the researcher takes up a position at another university, he or she can take his/her external money with him/her. Thus, the procedures concerning allocation of research funds have nothing to do with any decision concerning the performance of the university or the department as a whole."

At present, this method of allocation is also applied to the *Fachhochschulen*, whose commitment to research has been stimulated since the BMBF programme for Applied Research and Development at *Fachhochschulen* started in 1992. Although most *Fachhochschulen* still have difficulties in attracting funding for research, many academics there are now devoting themselves to forming research projects, with the aim of acquiring such funds (Federal Ministry of Education and Research in Germany, 2002).

Thus far, the new German system of performance-related funding has been conducive to moving the line between research- and education-centred institutions downwards. On the other hand, the British system of funding results in an upward movement of this line. To be more precise, in Britain, the research funds tend to be heavily concentrated merely among a small number of old elite universities. However, in Germany, it is possible that these funds will perhaps be granted extensively even to some *Fachhochschulen*, despite the current plan of promoting an elite research sector within the university system.

Conclusion

According to Angelika Schade (2003, p. 286):

> "The most significant reform in higher education in the last two decades has been the greater autonomy given to higher education institutions in most European countries and the move away from the 'interventionary State' towards a more 'facilitatory State'. This process has often entailed the releasing of higher education institutions from strict control through legislation by giving them the right to pass their own statutes in the broadening area over which they have autonomy. The main focus was on reforms in institutional management, in financing institutions and in procedures for assessment and quality control of the educational provision."

In this current of the times, the importance of performance-based funding and financial competition is being increasingly emphasised. This makes it more difficult to justify sustaining the traditional German separation of the *Universitäten* from the *Fachhochschulen*. As has been discussed in the

paper, this difficulty is partly due to the fact that the accreditation system is thrown open to both the *Universitäten* and the *Fachhochschulen*: this system provides an official guarantee that every *Fachhochschule* can compete – in the quality of their education – on equal terms with the *Universitäten*.

Moreover, the new German system of distributing performance-based funding to higher education institutions encourages many academics of the *Fachhochschulen* to enter into strong competition for research funds with their colleagues affiliated to the *Universitäten*. This is because the basic units of valuation in this system are individual applicants and the institutions that they belong to have habitually not been a decisive factor in this valuation.

However, dissolution of the disparities between the *Fachhochschulen* and the *Universitäten* may not be a story with a happy ending. The German funding system involves one structural issue by which it can bring about the further proliferation of demands for research money – the *Universitäten* will be required to share the limited amount of the money with many *Fachhochschulen*. Thus, German universities will suffer from a more serious dearth of such funds than they face at present.

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