The future university.

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THE FUTURE UNIVERSITY

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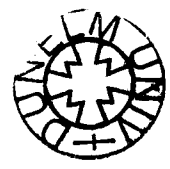

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SUMMARY

The 'university' has been around for centuries, and yet the majority of British Universities have yet to reach their 50th birthdays. The higher education sector has been through extensive change over a relatively short period of time, and will continue to do so as the future requires it. This thesis briefly maps the residual and dominant models of the university before examining the emergent model and drawing out a future model. While much of the history is based in Britain, the emergent and future models draw on examples from all around the world.

Essentially the future model of the university will have three core elements. It will be corporate, global, and virtual. Each of these is examined in detail in the thesis, and thought is also given to the potential impact of these developments on academics within universities and potential future students.

The models presented here may cause concern and some resistance in the higher education community. It is hoped that they will stimulate debate and action regarding the future, rather than encouraging people to stand their ground and defend the dominant or residual models. The emergent model is already upon us. The future model is there for us to shape.

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Chapter 1 - INTRODUCTION

> We are at a point where the old has now to be laid, certainly with dignity, to rest. The new awaits; but so does its formation, its definition and its character. Much lies ahead. (Barnett, 2000a:12)

As we leave the 20th century behind and move into the 21st century we are experiencing shifts in global paradigms. We are moving into a digital era (Tapscott, 1996); where we no longer think regionally but globally as the importance of place is downgraded (Toffler, 1970); where the middle class gives way to the knowledge class, and the post-industrial society is based around cyberorganisations (Shahidullah, 1996).

Taking the British university system as its anchor and roots, this thesis argues that the university of the future will be corporate, global and virtual. It aims to establish a future framework in which the university sector can evolve and examines the implications of this for both academic staff and students.

1.1 A Cautionary Note

All historical research is predicated on the interpretations of others. Not being present to witness the past for ourselves renders us dependent on the observations and analysis of others. Historical accounts will vary according to whose account is presented. Some accounts will prove more reliable than others, and this can be tested through triangulation involving the repetition element that arises when there are a number of accounts of the same occurrence from differing sources and methods of data collection.

Much has been written on the historical development of the 'University'. The idea of the university has been developed and analysed from a variety of perspectives. While there are

some facts which cannot be disputed, such as the incorporation dates of the medieval universities, the factors leading to and fuelling their existence may be open to interpretation. When the first universities appeared (Oxford, and then Cambridge, and three in Scotland), education was a privilege of the few. Given the limitation of this privileged participation to the upper classes, the development of the university may only have been recorded from this perspective. While this perspective may indeed be reliable and valid, it is worth noting that those philosophers who have addressed the idea of the university are themselves products of that same university. Their 'ideology', therefore, is likely to have been affected by their actual experiences in such institutions, what they would have liked their experiences to have been, and where they felt their experience was lacking.

The same can be said to be true for anyone who is studying the future of the university. There would be little reason to pursue the issue except as a form of research or study which is typically defined within the realms of the university sector itself. Hence, everyone who has written about the idea of the university, and everyone who is writing about where that idea may be shifting to in the future, has a vested interest in the subject, including this author. Consequently one of the limitations of this field of study is that some of the facts surrounding the issues may be clouded in opinions due to the emotive nature of the issues.

In his examination of the Culture of Education, Bruner (1996:13-42) suggests that there are nine 'tenets' that guide a psycho-cultural approach. While this thesis may not be a psycho-cultural approach, the nine tenets Bruner suggests highlight the limitations or assumptions that shape this interpretation:

1. The perspectival tenet - nothing is culture free, the way in which meaning is made within this thesis has been within a university culture itself.

2. The constraints tenet - the nature of human mental functioning and the symbolic systems accessible to human minds in general constrains our interpretation, and there is no alternative.
3. The constructivism tenet - the 'reality' we impute to the 'worlds' we inhabit is a constructed one, and this thesis is based on the world constructed by a white, middle class, well educated, liberal female.
4. The interactional tenet - interaction is required for the passing on of knowledge and skill, as indeed it was required for the collection of data in this thesis.
5. The externalisation tenet - the demonstration of our effort producing a 'record' outside us, which is the essence, nature and aim of this thesis.
6. The instrumentalism tenet - education suffers from institutionalisation, and the coercion, competition and conformity stemming from this must have some impact on all of those within the institution.
7. The tenet of identify and self-esteem - agency and responsibility for ourselves which will be seen to be a greater imperative in the future.
8. The narrative tenet - our personal world is made up of our stories, and indeed that is what this thesis may be.

With these guiding tenets now exposed, the starting point should be at the roots of the university, and a brief historical overview.

1.2 A Very Potted History

In the United Kingdom, the first universities appeared at the turn of the thirteenth century when there were two in England and three in Scotland. This situation remained for several hundred years until the 'ancient' universities were established in the nineteenth century.

Extensions of these universities gradually spread to offer education on a part-time restricted basis, mainly to women teachers, but led to the foundation of Ruskin College in Oxford - a college of Higher Education for working men.

In the latter part of the nineteenth century, the 'Redbrick' or older civic universities were founded, usually in industrial cities (eg Leeds, Nottingham, Manchester). These were followed by the newer civic universities after the second world war when some institutions offering courses validated by other universities gained independent status (eg Newcastle and Leicester). At this time a range of new university institutions also emerged, such as Stirling and Kent. The former Colleges of Advanced Technology (CATs) gained university status around 1964 and hence university institutions such as Aston and Strathclyde were formed. (Mackinnon *et al*, 1995).

In 1963, the Robbins Report led to the mass expansion of the sector and in 1965 the polytechnic sector was established, and grew five fold until 1991. This binary system of education endured until 1992.

In 1992 the 'New' universities were established by the polytechnics changing their names and status. In 1997 the higher education sector was once again the subject of a Government Inquiry, this time in the form of the Dearing Report (NCIHE, 1997). Currently the national agenda is suggesting developments such as the proposed 'e-university' and the refocus of universities in different sectors within the unitary framework (Blunkett, 2000).

Given the dominant terminology of university identification being 'ancient, red brick or new' it is questionable whether or not a unitary framework has ever been achieved in Britain. If

the split is not maintained on the above grounds, it is ever present in the form of the 'Russell Group' and its narrow membership restricted largely to the ancients and red bricks.

1.3 Competing Ideologies.

The foundation philosophies of the idea of a university have developed over time, as have the roles, uses and political pressures on universities to meet ever increasing criteria. As such a number of dichotomies have emerged as central debates as to the goals of the university. Allen (1988) proposes six controversial issues, which are essentially dichotomy, or continua, along which universities are trying to establish their position. Bruner (1996:66) suggests that concepts such as these are antinomy:

> As in most revolutionary times, our times are caught up in contradictions. Indeed, on closer scrutiny, contradictions in such times often turn out to be antinomies - pairs of large truths, which, though both may be true, nonetheless contradict each other.

In discussing antinomies, there are no logical solutions, only pragmatic ones. It may seem that logically a university has to take a stance one way or another. In reality however they take both stances and endeavour to make the contradictions work.

- *Antinomy 1 - Liberal or Vocational?*

Is the university to focus on the development of the 'educated man' (Newman, 1853) and provide education for the sake of education in the liberal tradition, or should that education have some practical use, application or vocation? This argument appears to have developed from a far-liberal standpoint in the early philosophies of higher education to a more moderate midpoint as the world recovered from two world wars and benefited from the development of compulsory school education for all.

Jaspers (1960) felt that the two could not be completely separated in that the development of a professional cannot be isolated from the development of the individual as a person. Birch (1988:38) further supports this view by claiming that a 'broader academic ethic places weight on both the capacity to create knowledge and to put it to work'. He proposes problem based learning as a means of giving real world application to academic concepts.

- *Antinomy 2 - Broad Based or Specialised?*

Should the university focus on the arts or sciences, the pure or applied studies, or should they offer a full variety of courses? Traditionally Oxford specialised in the arts and Cambridge in the sciences. However now both offer courses across the curriculum and have even moved into the salubrious world of the 'Business School'!

- *Antinomy 3 - Research: For or Against?*

The production of knowledge was one of the key foundations of the ancient universities which is still prevalent in the 'old' university sector and is a growing area for many 'new' universities. The essence of academic freedom is founded on the will of the academic to carry out research of their choice. The idea of universities being places of research is a residual of where universities have originated from. Whether it will remain dominant in the future will depend somewhat on the funding prowess of the institutions. Thomson (2000a) reports Blunkett's vision which recognises that there will be some elite research universities but fails to address the role of research in the non-elite. Will they be condemned to being teaching institutions and if they are purely teaching institutions will they remain 'universities' as there will be no research to underpin their teaching?

- *Antinomy 4 - Research: Pure or Applied?*

Gibbons *et al* (1994) differentiated between Mode 1 and Mode 2 production of knowledge. Mode 1 was the traditional disciplinary research which was set in a cognitive context. Essentially it was research for the sake of research and the pursuit of knowledge. Mode 2 production of knowledge, however, is transdisciplinary and is oriented to contextualised results. It is research for a purpose and is controlled by success, efficiency and usefulness. Essentially Mode 1 was pure research while Mode 2 is applied.

Research is not solely the domain of the university. Industry also invests heavily in research and private funding of university research is emerging as a necessity for the continuation of large scale research projects within the sector. Corporate universities will collaborate with public universities for the production of Mode 2 knowledge as they have much to gain from its development.

- *Antinomy 5 - Lecturers: Expository or Didactic Style?*

Is the role of the lecturer one of making facts and sources available, giving information and being a source of reference, or is it one of teaching? Should the days of the lecturer talking at students for a period of time, in a language that is often incomprehensible to them, in a largely unapproachable manner, be a role of the past? Should the lecturer be a teacher, engaging students in learning and supporting them through the process?

- *Antinomy 6 - Lecturers: Passive or Active Role?*

While antinomy 5 focuses on style of delivery, antinomy 6 questions the extent of delivery. Where does the responsibility for the student's learning lie? Is it solely with the student or does the lecturer have an active role in ensuring student attainment? To what extent should the lecturer intervene, monitor and guide students to ensure they achieve the set criteria?

In addition to these six, others can be added for the future university:

- *Antinomy 7 - Local or Global?*

Universities have been historically bound by their locality. Students could only study at a university to which they had physical proximity. The Open University challenged the locational boundary with the introduction of distance learning. Now the digital revolution has widened possibilities even further. There are no boundaries on the Internet once you have the ability to access it (in terms of wealth, electricity, telephone lines etc). Essentially every university in the world can compete with every other university in the world for students. In reality, however, many universities in Britain still rely on their local population for their mainstay of students (both regional and national). The extent to which this will be financially viable and feasible in the future is unknown. The extent to which a university localises or globalises now could determine its long-term future. Indeed, Blunkett (see Thomson, 2000a) suggests three tiers of universities; research, regional and community colleges. While none of these three may have been an ideal choice for some, pathways are clearly being set in the government for the higher education process.

- *Antinomy 8 - Physical or Virtual?*

There are many myths in higher education. One such myth is that attendance at classes improves performance. This may be true for the individual students who would choose to undertake no other learning strategies, however it is not true for all. A meta-analysis by Russell (1997) showed that the attainment levels of distance learning students did not differ significantly from the attainment levels of students taught on-campus. This again poses significant questions regarding the role of lecturers. Indeed, what is their role in the virtual university? The development of on-line materials requires very different skills from being able to stand up and deliver to a lecture theatre full of 200 plus students.

- *Antinomy 9 - Democracy or Economy?*

The Dearing Report (NCIHE, 1997) outlined four main purposes for higher education. The first related to inspiring individuals; the second to generating applicable knowledge to benefit the economy; the third related to the needs of an adaptable knowledge based economy; and the final one related to shaping democracy and inclusiveness. These four may be at odds with each other. The first and last are about developing freedom of thought and action while the middle two are about directing that thought and action for specific purposes, essentially determined by the nation state. The conflicting nature of these identified purposes forms the basis of this antinomy.

- *Antinomy 10 - Individualism or Collectivism?*

Newman's idea of the university (1853) was rooted in religion. Morality, ethics and values, a sense of self-awareness and psychological well-being is also picked up by Allen (1988) as one of his goals for higher education. Yet we are moving into a discourse of global citizenship, mass expansion of higher education, knowledge based societies and on-line learning. The mass production of education inevitably loses the personal touch and individualism that the historical model of the university offered.

Herbst (1973:64) argues that 'because it is a universal tendency for people to rationalise the pressures upon them and to contrive an ideology designed to make these pressures bearable, universities reflect the ethos of the societies in which they operate...'. In other words, universities interpret their purpose in light of the dominant discourse, such that universities 'become a factory for making a certain kind of equipment which society needs' (*ibid*:69) with regard to people. Essentially universities are being driven towards a model based on the mass production line process for human widgets conforming to a national specification, rather than the development of individuals in their own right.

The next section looks at the discourses regarding the idea of the university in light of Williams (1958) cultural analysis.

1.4 Dominant, Residual and Emergent Models of the University.

Raymond Williams (1958) analysed culture in terms of its dominant, residual and emergent patterns and this is a useful categorisation with which to model the university.

Scott (1995) argues that the dominant model of the university is the mass higher education model currently in place. He believes "the ancient pedigree of the universities is largely a myth" claiming that the university "has survived because it has changed so much" (*ibid*:11). He maps this growth against the needs and developments of wider society. Pre-industrial Britain had little need for a university while postmodernity requires a critical mass with education at a higher level.

There is little doubt that mass higher education is here to stay and further expansion is on the national agenda (NCIHE, 1997). The 'old' ideas of the university, the residual model as such, of the liberal education institution, the protected academic community (vis-à-vis a lack of public accountability and hence little challenge outside the boundaries of the university institution), and the donnish dominion (Halsey, 1992) is now in decline. Residual traditions such as the cap and gown graduation ceremonies, the collegiate traditions of some institutions, and the campus life of students continue for some but are also under threat. Many students cannot afford the expense of attending their graduation ceremonies (Baty, 2000), the collegiate fee's structure is the subject of debate and more students are choosing to study from home than immersing themselves in the traditional university student life. The residual idea of the personal tutor has all but disappeared as the increase in numbers makes it impossible for academics to maintain that individual contact with tutees. Tutorials are no longer one-to-one interactions but twenty-to-one or more in many institutions.

Hence the dominant model is the supposed unified system of higher education in Britain at present. The ancient, old and new universities are all part of the same comprehensive system, providing a variety of education along the pure-applied and hard-soft continuum. It is a model where modular delivery and assessment processes dominate and credits are ideally transferable between institutions and courses. Funding and quality are the key Governmental

issues, and employability is the key focus of the student's engagement in the process (Blass, 1999).

It is a model of tension and uncertainty, or inertia and resistance to change. The ten antinomy mentioned are unresolved in most institutions and hence they lack an identity and focus. They are trying to be all things to all people and are spreading themselves too thin. The future is requiring change and the institutions are adapting at the rate of dinosaurs. Despite the fact that three quarters of UK universities are less than four decades old (Scott, 1995) they are clinging to the romantic ideals of the residual past, the myth perpetuated by the few idealists writing to shape the future of the university from their privileged position at the turn of the century.

The emergent model being proposed by the government is of research, regional and community college universities (Thomson, 2000a). This vision is short-sighted. As well as proposing this stratified system, the Government is calling for institutions to join forces with industry for the e-university, and it is widely reported in the media that it will be the 'elite', the Russell Group, that are at the core although it would appear they are starting to 'log out' of the idea (Goddard, 2000c). This conflicts with the stratified system. Those who are likely to be the best deliverers of on-line materials, those providing multiple methods of student support at a distance are those who are moving towards working that way with their existing home students, and not the elite research based universities who have a greater hold on the residual model because they can afford financially to do so. These universities have significant funding to concentrate on research rather than teaching. A large part of the teaching is carried out by research assistants. However these are the universities being asked to tender for even greater funding to develop new e-materials, while those universities

concentrating on developing teaching materials and new modes of delivery, because their financial basis depends on it, are largely being excluded from this process.

The paradoxical stance the Government is taking regarding the emergent model will not save the dinosaurs. The future requires a smarter picture than this. In the same vein that industry had to become leaner and find new ways of working, so will universities. Banking was revolutionised by technology. Education will be also. Nobody needs to go to a bank anymore, they can use the phone, internet, cashpoint or supermarket instead. It is either the telephone or cashpoint machine that are the focus of transactions. The 'empty' university campus could be a possibility for the future. Education could be the next financial services.

So where does this leave the emergent model of the university? The thesis presented throughout this work is that the emergent model of the university is corporate, global and virtual. Each is looked at in turn and then the interconnection between the three is discussed. Current initiatives in different institutions around the world highlight innovations that are taking place in isolation to offer examples of how universities can operate differently and survive. As Barnett (2000a:17) claims, 'the postmodern university makes its own luck in this world.'

No thesis is complete without a methodology chapter, and the following chapter discusses broadly the question of how to research the future, as well as outlining the processes undertaken in this study. Chapters three to five present the main arguments for the future of the university being corporate, global and virtual in turn, and then discussion shifts to the implications of this model for both academics and students.

Chapter 2 - METHODOLOGY

How does one research the future? The very notion of researching the future is a paradox. The word research lies within the time boundaries of the past and the present so to research the future appears a logical impossibility. Given this, when approaching the subject of the 'The Future University', attempts to ground the methodology in any single paradigm or set of constructs proved a fruitless task. Indeed, it became apparent that when undertaking research into an area that is something new, in the future, which could constitute a new field of research, fundamentally a new methodology needed to be created. It is this that is outlined first in this chapter, before its relation to other methodological approaches are discussed.

2.1 Researching The Future University

When researching the future, no one method is appropriate in isolation. Quantitative forecasting, extrapolation and time series may prove useful if there is raw numerical data to work with. However given the nature of 'the future' itself, even raw quantitative analysis needs contextualising and interpreting in light of the assumptive constructs. In this particular study, five key elements were examined in order to gain a fuller picture of the 'future university'. These were not mutually exclusive and are mapped below:

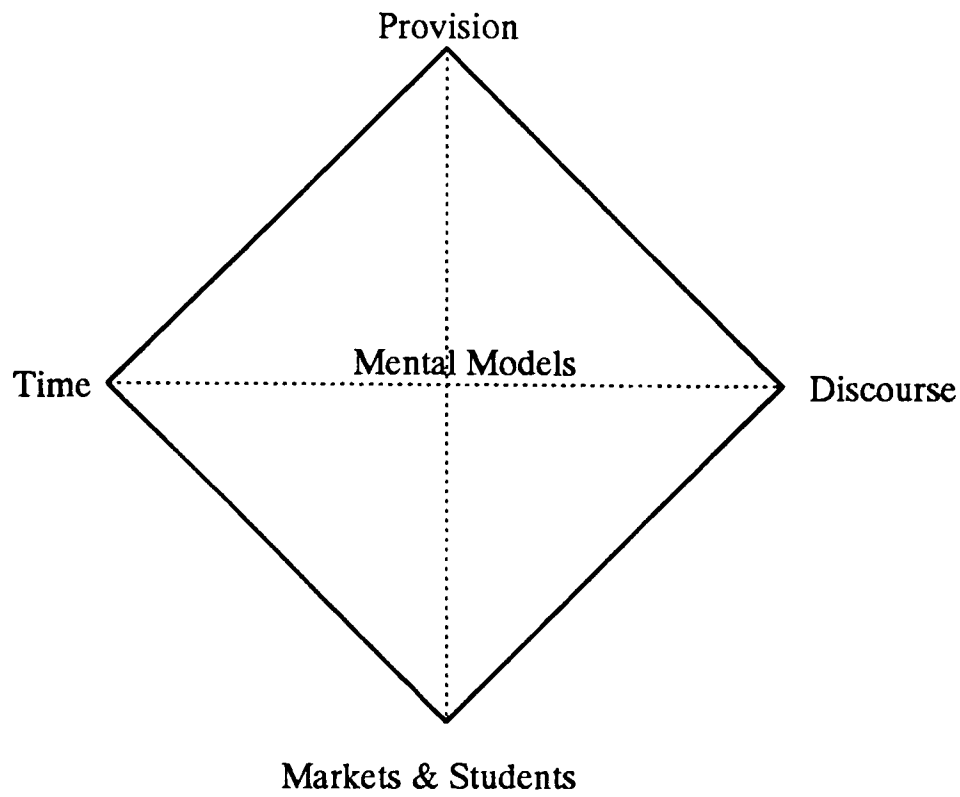

Figure 2.1: Elements of research focus in 'the future university'.

In analysing where the university may be going in the future, an understanding of its history was fundamental. This analysis took place by mapping and interpreting the university's development against the four elements of provision, discourse, time and markets and students. Different mental models were then used to explore the constructs of the underpinning analysis to draw out scenarios for the future.

The time element is perhaps the most straightforward in terms of what key events happened with regard to the founding of 'traditional' universities, their expansion from the medieval to the ancients, then the 'red bricks' before the polytechnic sector became the 'new' sector following the 1992 White Paper. Time was more difficult to establish with regard to the developments that are driving the sector into the future. For example, when was the first course delivered by "virtual" delivery? When was the first corporate university founded? When were international students first recognised as a separate market with a separate fee paying structure? The answers to such questions are unclear as much depends on

interpretation. Both Walt Disney and Motorola claim to have set up the first corporate universities depending on how they choose to define corporate universities. Would the Open University broadcasts of materials over the television network be heralded as the start of virtual delivery?

The same lack of clarity can be found in locating the provision. While the traditional, stone built institutions can be (literally) mapped, the virtual and corporate embryos are more difficult to trace. This is partly due to a lack of transparency particularly on the part of the corporate universities and a lack of visibility on the part of the virtual developments as they are strategically revealed to niche markets in a highly focused and controlled manner. They do not undertake mass marketing to raise general awareness of their existence because their client base has been clearly defined.

An added difficulty with the 'provision element' was that it changed continually throughout the progress of the study. New developments became apparent on a weekly basis such as the 'e-university' launched by David Blunkett in England, the 'global university alliance' launched in Hong Kong, and on-going developments such as the establishment of a Rolls Royce Corporate University. This was accounted for largely in the fact that most of the new developments were, to a large extent, copies of existing provisions but in different locations and markets. The nature of the traditional university institution, its *modus operandi* and bureaucracy, makes it difficult for it to change at any great speed, so minor advancements tend to be seen rather than giant leaps forward. Indeed, this is something that will probably have to change if traditional universities are going to survive in any form. This is discussed further in the analysis and conclusions.

The discourse element of the analysis took the format of Raymond William's cultural analysis, identifying the residual, the dominant and the emergent discourses existing within the traditional university sector and the educational journals, press and publications which maintain this status quo. In mapping these three discourses, a fourth discourse 'the future discourse' became apparent and is drawn out through the analysis.

Much of the change in the 'markets and students' element of the study has been the result of deliberate public policy. For example, it was the Robbins Report that resulted in the development of the 'red brick' universities and then the establishment of the polytechnic sector, which then changed status in 1992 as the result of further Government consultation papers and policies. The introduction of student fees into the British university sector has added a new area of debate to the agenda. Universities are arguing amongst themselves and with the government, as to whether they should be allowed to set the level of this private funding element or whether it should be a set rate for the whole sector as is its current status. The expansion of higher education has seen a rise in student in-take to approximately 35% of the school-leaver population. Other markets such as part-time returners and overseas students are being explored for additional students.

The final element, which spans the other four, is that of mental models. This looks at and challenges the mental models and constructs that have developed in light of the other four analyses. A mental model is the way in which we interpret and make sense of the world. Mental models give us insight into how people interpret evidence presented. Notably it has been the most surprising area to research as many people have found it difficult to consider one of these models. For example, a group of employee relations lecturers were given the task of assuming that in 50 years' time there would be no trade unions. The question posed to them was 'why would that be?' Some of them could not accept the assumption rejecting it

with comments like 'that wouldn't happen'. The only way to get them to even comprehend that their mental model of trade unions could change was to tell them that in 50 years' time there was no work - then they could see that there might not be trade unions. Getting people to step outside their mental models into new ones was virtually impossible for some people, and yet others found it easy.

The five key elements outlined above underpinned the approach taken towards looking at the future university. Each of these in turn was systematically analysed using five main domains:

1. *Information in the Public Domain* - newspapers, journals, television and government papers all proved useful, but by far the most fruitful source was the world wide web. This was particularly the case for the provision and discourse elements as it is often possible to see future developments on the web before it is presented in a format acceptable for consideration as academic discourse or media friendly. When it comes to digital delivery and the virtual university, the provision is ahead of the discourse. The lack of censorship, peer review or any form of quality assurance with regard to the web based sources does need to be noted, however they are still valid data sources of representations made by the various sites themselves. Even if their reliability or validity would be questioned as a matter of fact, they must be considered valid as representations of their owners or domains.
2. *Attitudes* - academic peers, students, any locatable stakeholder and/or customer, and those outside of the 'university' community all have views, opinions and attitudes with regard to the future. This was particularly useful in this study in gauging the markets, students and provision elements, as well as the expected or anticipated impacts on future students and current academics.

3. *Historical logic* - with regard to both provision and discourse. Without the historical map of where the university has come from, it is difficult both to map the time element and also to understand the rationale behind the competing mental models.
4. *Curriculum and experience* - looking beyond the delivered curriculum within any university to the wider curriculum within the community. This included industry, community and international experiences and what their curriculum provision and needs are. A number of institutions are developing lifelong learning award frameworks to help develop curriculum and accredit experience and learning which has not been traditionally held within the boundaries of the university's remit.
5. *Models of the future* - digital, apocalyptic and utopian models of the future have all been considered in this study, although the apocalyptic models were not pursued in any great depth as these implied there was no future beyond a certain point in time. While the digital model is the one on which this study focuses most closely, elements from the others have been considered and largely rejected on the basis that they do not fit with the available evidence, trends and changes currently taking place. This provided the basis for much of the mental modelling research.

The combining of methods in this thesis arose from the need to find a workable design. As the combinations of questions raised here have not previously been asked, the design of a strategy to answer such questions has not been considered. Robson (1993:38) maintains 'the general principle [is] that the research strategy or strategies, and the methods or techniques employed, must be appropriate for the questions you want to answer.' In order to fulfil this appropriateness a process of steps were taken which drew on the primary sources and examined the primary elements as indicated below:

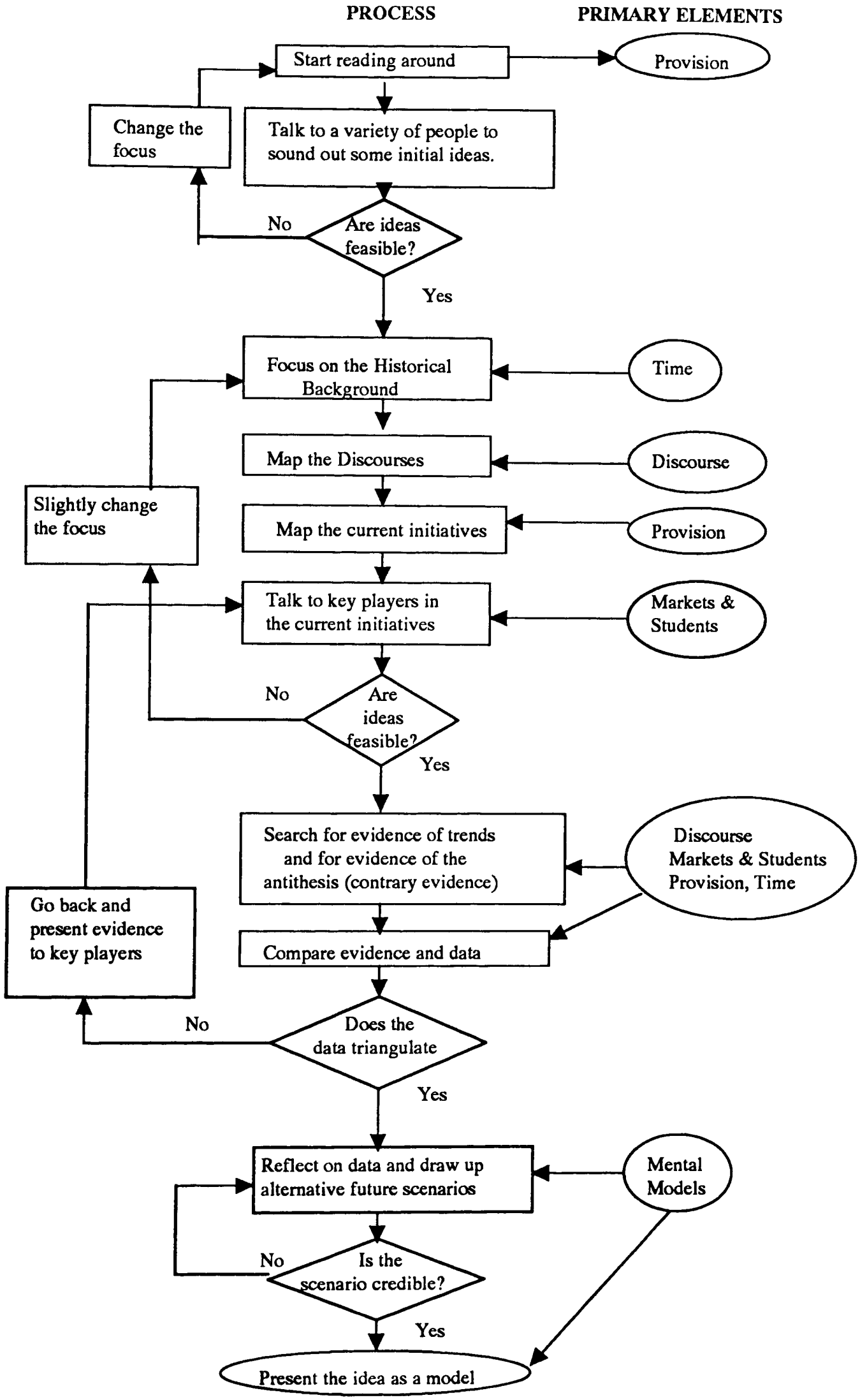

Figure 2.2: Flowchart outlining the process undertaken and its relationship with the core elements of the research.

The use of more than one method in this research suggests that the data has been 'triangulated'. Cohen and Manion (1994) suggest that triangulation is particularly useful when trying to achieve a broader perspective, and both group, scientific data of an objective nature can be used alongside individuals' data which tends to be more subjective. This, however, does raise the question of validity - was each method employed providing evidence concerning the same construct? The construct in this instance is wide (the Future University), and the nature of futures approaches are such that they require diversity and alternatives. It could therefore be argued that any data collected within this study is valid.

The reliability of the data requires separate scrutiny. One of the core elements of this study is time. While the research has been conducted, time has been moving on. Data collected on one day could be superseded by data collected the next. This was exemplified by the developing in the UK of a national e-university, where newspaper reports changed the proposition on a daily basis and then the government's own website suggested something completely different from the press reports. The ongoing time element in any futures study could raise concerns around the reliability of the data. The only way that this can be satisfactorily resolved is to say that such a study is essentially a snapshot, a freeze frame, or a moment in suspension where time has stood still and a picture taken. Then, as time moves on, the picture starts to change.

2.2 Paradigmatic analysis.

It is questionable in itself whether 'futures studies' is an adjective or a noun. In one sense futures studies describes a field of work with a common interest, while in the other it is a discipline in its own right. It may have started in one vein and developed into the other, such

that the group of work described as futures studies over time has become established as a discipline in itself. This grammatical difference is not resolvable at this juncture, as the literature and methodology alternate between the two.

Bell (1997a:2) introduce futures studies as 'a new field of inquiry that involves systematic and explicitly thinking about alternative futures' (*sic*). While Futures Studies has only been recognised as a specific area of study quite recently, Bell (*ibid*) traces its roots back to the 16th century when Thomas Moore (1915) wrote 'Utopia' and founded a new genre of literature. Moore's Utopia was based in the same time frame but a 'distant' place; in 1795 the Marquis de Condorcet sketched the *'Progress of the Human Mind'* looking at the same place but a 'distant' time. Thus far utopian writing, which provided the foundations for Futures Studies, was centred either in the same place but a future time, or the same time but a future place. Marx and Engels arguably attempted to construct their utopia in a the current time and current place. In 1970, Alvin Toffler published *'Future Shock'*, a book of predictions that became an international best seller and since then there have been a proliferation of 'futures' books, models, simulations and studies. In 1964 the World Futures Society was established by Edward Cornish, and a new discipline was being developed.

The extent to which Future Studies is indeed a new discipline is questionable. In many respects future studies falls within existing paradigmatic boundaries. Remenyi *et al* (1998:54) suggest that 'the techniques used for futures research are relatively positivistic in nature but the results may be interpreted in a more phenomenological way.' Dane (1990:21) discusses the scientific approach to research, defining science as 'a systematic approach to the discovery of knowledge based on a set of rules that defines what is acceptable knowledge'.

SCIENCE IS:	SCIENCE IS NOT:
A way to obtain new information	An activity per se
Described by a philosophy	Defined by only one philosophy
Generalising from facts	A way to prove theories true
Grounded in paradigms	Blind acceptance of tradition
Based on consensus	Relying on personal authority
A matter of faith	Uncritical faith
Deterministic	Predestination
The best approach we have	Refusing to search for a better approach

Table 2.1: Box 2.1 cited in Dane (1990:32)

By applying the rationale outlined by Dane in Box 2.1 above, Futures Studies is indeed a science. It is endeavouring to obtain new information within a range of philosophies. Such studies have to generalise from facts as they are by definition inductive.

> Inductive reasoning is a process of generalisation; it involves applying specific information to a general situation or future events ....
> .... Inductive inferences cannot be proved true, but we need to use them to construct theories until we have evidence to the contrary (*ibid*:32).

The extent to which futures studies are based on consensus is perhaps the most contentious of the elements as many techniques do indeed rely on personal authority. Studies involving Delphi technique, for example, rely on the personal authority of the individuals chosen to participate in the study, but the researcher could maintain distance in the analysis such that their own personal authority does not bias the results. The elements of faith and determinism can be addressed with regard to the underlying assumptions of futures studies.

Wendell Bell is perhaps the most prolific writer on the establishment of futures as a legitimate field of academic study. He proposes as purpose; 'to discover or invent, examine and evaluate, and propose possible, probable and preferable futures' (Bell, 1997a:73). Essentially this 'purpose' embraces exploratory research (discover, examine and evaluate); descriptive and explanatory research (examine and evaluate); and predictive research (proposing possible, probable and preferable futures). It also has a normative element in terms of 'preferable' futures. In combining a range of research possibilities, futures studies

may well be 'legitimate', but their need to be 'established' as such implies that they are a new field in their own right.

This need for legitimate recognition as a field in its own right raises questions as to the motives of the futures researchers. Given the inclusion of futures methods within existing paradigms, the research itself is arguably legitimate so why is their the need for recognition as a separate field. Karen Legge (1995) raised similar questions when Human Resource Management endeavoured to identify itself as a separate field from Personnel Management. Essentially, it was argued, that HRM was 'old wine in new bottles' (Armstrong cited in Legge, 1995). In the end, Legge argues that much of the impetus for the change was self-interest. There has never been a university Chair in Personnel Management, but there are many Chairs in HRM. By recreating itself, personnel management improved its status and visibility as a serious academic subject. Could futures researchers be doing the same thing, and is this necessarily a problem?

2.3 Assumptions underpinning Futures Studies

In his efforts to establish Futures Studies as a paradigm, Bell (1997a) proposes some assumptions to the field of studies. These assumptions can be critiqued to show many limitations which as a base of assumptions, undermines the status of Futures Studies as a discipline:

1. *Time is continuous, linear, undirectional and irreversible.* This assumption is culturally bound and also conflicts with the theories of quantum physics where more than one time frame operates in the same place and space.

2. *Not everything that will exist has existed or does exist.* This allows for discovery, invention and innovation, and to some extent expresses an obvious state of affairs.
3. *Futures thinking is essential for human action.* This assumption needs further clarification as many human actions occur without a thought to the future. Again there is a cultural assumption here that the 'here and now' does not warrant human action, only the future.
4. *In making our way in the world, both individual and collectively, the most useful knowledge is "knowledge of the future".* This is an impossibility. We have no knowledge of the future, and if assumption one is correct, there is no way in which we can have any knowledge of the future. Indeed this assumption is directly in conflict with assumption five.
5. *The future is nonevidential and cannot be observed, therefore there are no facts about the future.* Does this then mean that all futures studies are works of fiction?
6. *The future is not totally predetermined.* This assumption is useful in legitimising the value of futures studies.
7. *To a greater or lesser degree futures outcomes can be influenced by individual and collective action.* This may be true but it can never be proven. Once an outcome has occurred we cannot 'undo' it and go back and see what would have happened without that influence. The closest approximation would be an experimental design using test groups and control groups, but this could not be carried out into the future without raising serious ethical issues, and nor is it appropriate in this context.
8. *The interdependence in the world invites a holistic perspective and transdisciplinary approach, both in the organisation of knowledge for decision making and in social action.* Hence futures studies are an approach which can fit holistically within all disciplines and existing paradigms, although again this assumption is culturally dependent.

9. *Some futures are better than others.* This suggests futures studies is a normative field, yet this element of judgement or utopia does not appear in all discourse, and where it does appear, it is based on the values and interpretation of the present. Bell (1997b:65) recognises that utopian writing is 'a reaction to what is going on in the world' and tries to legitimise the normative element of futures models by proposing a method for examining moral judgements and value statements. First, has there been commitment to deducibility, that is, do the conclusions follow the assumptions? Secondly, can a causal relationship be established between the model and the value? Finally, what is the epistemic implication? That is, there is a need to test empirically the validity of value statements. This suggests interpretative constructs and paradigmatic analysis within phenomenology. Not all futures studies need to have this normative element. Exploratory studies simply look at plausible futures, ignoring the 'desirable' element of normative study's focus. Given this, the value element of this final assumption will not hold true for all futures studies.

Sardar (1996) claims that the assumptions of futures studies need additions to contextualise them in terms of their historical development. In essence he brings the postmodern vision into the futures debate by claiming that futures studies have been limited by the following:

1. *The only worldview, and the associated metaphysics and values, worthy of attention is the western civilisation's worldview.* This has been clearly exemplified by Bell's analysis above.
2. *There is only one science of nature that is objective, positivist and universal; western science.* Hence the culturally bound, narrow definition of science has been applied.
3. *Reality, however it is defined, is constructed in the image of the white man.* This would equally be argued by feminist researchers.

4. *The vast majority of people in the world have no future.* Given the current direction of futures studies and their bounded criticality (El-Sawad, 1998), those areas of the world which do not fall within the culturally bound western white male analysis are ignored.

While these may seem a little harsh and directly to the point, Sardar has indeed focused on a trait present in the current futures discourse, which is returned to in detail when the 'virtual university' is considered as one element of the future university. When writers consider the digital future, no thought is given to those areas of the world where there is no clean water never mind digitalisation. This again highlights the limitations of a normative futures model. It is an inevitable limitation that the 'preferable' element is developed on the basis of the authors' experiences, and they are predominantly western, educated and middle class.

Futurists do not fall within any single one of the traditional research paradigms. They fall within many of them which is essentially quite a postmodern thing to do. As already mentioned using Dane's definition of science, a futures study could be considered scientific which brings it within the realms of positivism. This may not be positivism as the 'logical positivists' would pronounce (Hammersley, 1995), but the twentieth century philosophical positivism which has adapted and learnt from criticism. There are lessons to be learnt from the modern positivists that could apply to Futures Studies within positivism:

1. They remain credible as they accept and deal with criticism.
2. They should not reject natural science as a primary method in social science.
3. They should not abandon the principle of value neutrality as it prevents political ambition.
4. The importance of clarity of expression.

Philosophy must not be seen as superordinate to empirical research. Research is a practical activity and cannot be governed in any strict way by methodological theory (Hammersley, 1995:19).

2.4 Neutrality and Interpretation.

In 1911, Dilthey's thesis that 'human discourse and action could not be analysed with the methods of natural and physical science' (Miles and Huberman, 1994:8) started the interpretivist traditions, in particular phenomenology. Interpretivists accept that the researchers cannot separate themselves from the research process and brings as much to the encoding and analysis of data as the data itself. Hence the normative rationalisation in futures studies would be expected and anticipated in the phenomenological paradigm and would not be seen as an area of contention. The social construction in which futures writers are framed is that of modern industrial society, based on western rationalisation, science and economic growth (Walker, 1996).

Hammersley (1995:103) questions the extent to which research can be anything other than a political activity and gives four areas for consideration:

1. *It is implicated in power relations as universities are not autonomous from the state.* This statement relates to the use of Universities as vehicles for research, but becomes an even greater consideration in the future as corporate links develop further.
2. *It [Research] is autonomous from external power in terms of ideology.* This may allow research to criticise or condemn practices under examination, but again as the corporate element is introduced in the future with regard to funding necessities, this autonomy will remain contentious.
3. *Research institutions exercise power on their own behalf and in their own interests.* No institution is likely to publish findings that undermine its *raison d'être.*
4. *Value judgements are implicated in the research process.* This is presented by Hammersley as an inevitability as all interpretation, deconstruction and analysis is carried

out by people who inevitably have been shaped by their prior experiences and this will affect what they see in the data.

If research is a political activity, and universities are vehicles for research, it is inevitable that they can be viewed as political institutions. As the Corporate and Virtual elements of the university develop, and the research agenda is driven by their differing needs, the political analysis of the university will change.

2.5 The 'bricolage'.

Denzin & Lincoln (1998:4) suggest that the qualitative researcher is a 'bricoleur' using many different methods to form their picture or 'bricolage':

> The *bricoleur* is adept at performing a large number of diverse tasks, ranging from interviewing to observing to interpreting personal and historical documents to intensive self reflection and introspection. The *bricoleur* reads widely and is knowledgeable about the many interpretive paradigms....
>
> The product of the *bricoleurs* labour is a *bricolage*, a complex, dense, reflexive collage like creation that represents the researchers images, understandings and interpretations of the world or phenomenon under analysis.

In essence this thesis is a *bricolage*. It is based on an extensive review of literature from many fields, in this case education, futures, information technology, digitalisation and management. It has involved interviews with people in industry and education; participation in new educational ventures such as writing a CD-ROM, web-based learning materials, and IDL (interactive distance learning); case study analysis and endless discussion.

In the final *bricolage,* it may at first sight be difficult to identify which material is which. In trying to present a coherent picture the *bricolage* is not presented in terms of methods or results, but as themes which have recurred throughout the work as it appeared the most logical form of presentation as the data was gathered. As such, the findings regarding the

future university can be divided into the 'corporate university', the 'virtual university' and the 'global university'. How each has been drawn from the primary sources is outlined in Table 2 below.

Primary Source	Corporate University	Virtual University	Global University
INFORMATION IN THE PUBLIC DOMAIN	• Newspaper articles (BAe, UnipartU) • Web sites (Motorola, Waterloo, McDonalds) • Literature (Macfarlane, Walton)	• Newspaper articles (particularly THES) • Websites (AVU, BAe) • Literature (Negroponte, Tapscott)	• Newspaper articles (particularly THES) • Websites (AVU, Derby, Monterray) • Literature (Scott)
ATTITUDES	• Formal Interviews (BAe) • Telephone Interviews (Unipart, C&W) • Conference attendance (SRHE & Corporate U's)	• Formal and Informal interviews (Derby, BAe) • Conference attendance (SRHE, IPD) • E-mails (Singapore & Hong Kong)	• Interviews (particularly Derby) • Conference attendance (particularly SRHE & QA in HE)
HISTORICAL LOGIC	• Websites (Incl. Motorola, Disney) • Interviews (BAe, Unipart) • E-mails (Waterloo) • Informal conversations (Motorola, C&W)	• Literature (Wired Magazine) • Websites (AVU, Monterray)	• Literature (Scott) • Newspapers (THES) • Websites (Africa, Central America)
CURRICULUM & EXPERIENCE	• Websites (Motorola, Unipart) • Interviews (BAe, Unipart, C&W) • Literature (Macfarlane) • Personal Experience	• Websites (AVU) • E-mails (Singapore & Hong Kong) • Newspapers (THES) • Personal Experience	• Websites (Various UK & US universities) • Interviews (Derby) • Personal Experience
MODELS OF THE FUTURE	• Based primarily on ideas stemming from interviews and literature	• Based primarily on ideas stemming from literature and websites	• Based primarily on ideas stemming from interviews, experiences and web searches

Table 2.2: Mapping the 'Corporate, Virtual and Global' university outcomes against the primary sources of research evidence. **(The sources given in the brackets are not the sole sources for each but are given as indicative examples.)**

The models resulting from the primary data collection are presented in the next three chapters, after which the analysis shifts to the impacts and implications of these models on the academics working in such institutions and the student experience.

Chapter 3 - THE 'CORPORATE' UNIVERSITY

> The purpose of education is life-enhancing; it contributes to the whole quality of life. This recognition of the purpose of higher education in the development of our people, our society, and our economy is central to our vision. In the next century, the economically successful nations will be those which become learning societies: where all are committed, through effective education and training, to lifelong learning. (Dearing, 1997:1.1)

It is notable that Dearing feels the need to mention 'education' and 'training' as two separate entities. Education is associated with institutions and training with industry. It is the combination of both above that result in the achievement of 'lifelong learning', and it is this lifelong learning which will make the nation a 'learning society', and in turn it is this learning society which will result in the economic success of the nation; in essence the competitive advantage of 'UK Plc'. Blake *et al* (1998) highlight this shift from enhanced quality of life to economic competitiveness and questions the conflict that then arises around issues of skills and instrumental reason, individualism and learning, and the ends of higher education in themselves. Clearly there are arguments for an economic imperative for Higher Education and this was raised as an antinomy earlier. It is, however, the extent to which the fulfilment of this imperative is at the expense of other aims and purposes that will determine whether the relationship between the University and Industry is one of collaboration or one of competition.

There are various ways the relationship can be interpreted. Firstly there is the view that universities are themselves becoming corporations. This is the model of the 'entrepreneurial university' as described by Clark (1998). Next are the competitive views that stem from the development of 'corporate universities', a concept which is difficult to define but broadly refers to the establishment of 'universities' within private corporations. (Blass, 2001). There is the collaborative view about which much has been researched and published (see for

example Kells, 1989), and finally there is the 'corporatisation' model (see for example Macfarlane, 2000), in which the private corporations 'take over' the public universities, offering a bleak future from the liberal perspective as it results in the private sector agenda shaping the nature of public Higher Education. This chapter considers each of these emergent models of the university with regard to its corporate choices and then brings their key ideas together to map the emergent model of the future university. An alternative future model is also outlined that would require universities to act now in moulding their corporate relationships.

3.1 Collaboration for Funding Purposes

The university sector in Britain is generally considered to be of 'public ownership'. In fact, this is not strictly true. Since the polytechnics gained university status in 1992, there is no legal obligation for any university to accept publicly funded nationals as students.

Universities are essentially private corporations, and it is quite possible to divorce the university from the State (Russell, 1993). The reality, however, is that the majority of UK Universities are dependent on public funding sources which are paid for by the delivery of higher education on an individual student basis. It would however appear that this element of funding is no longer sufficient and overseas students are subsidising the home market (Goddard, 2000). The introduction of student fees has added an additional funding element, but this element of 'private' funding is at a fixed level and will remain so for the majority of universities, although some are considering pushing for top-up fees (Thomson, 2000b). Research can bring in additional funding through universities bidding for a share of funds allocated by research councils, and through funding allocated as a result of the RAE (research assessment exercise).

The funding basis is not the same for all universities. Some, although considered to be very much public, are essentially private with regard to their funding sources. The University of Warwick, for example, earns a considerable amount of its revenues from industry collaborations. It took a pro-industry stance along with its belief in 'academic excellence' and established various collaborative bodies such as the Warwick Manufacturing Group (a members only research and development club), the Warwick Conference Centre, Science Park and Business School (Clark, 1998). Strathclyde University is another which has considerable amounts of funding generating from the private sector. In particular, Strathclyde has considerable returns from intellectual property rights resulting from pharmaceutical research, and their Institute for Drug Research continues to operate in this vein. Here the institutional belief is one of 'useful learning' *(ibid)* which necessarily aligns the university with industry as it is industry that makes direct use of the learning.

Burton Clark (1998) in his analysis of 'entrepreneurial universities' identifies five elements that transforms a 'traditional' university, for want of a better word, into an 'entrepreneurial' one. A steering core, both managerial and academic is fundamental. This implies the introduction of a private sector mentality regarding customers and profit in a sector steeped in traditions of students, collegiality and research for the expansion of knowledge although crucially the academic element is maintained in that core. Secondly, Clark advocates links with outside organisations and groups; he identifies an imperative to link with industry which leads to the third element, the concept of a diversified funding base. Entrepreneurial universities are not dependent on a single source of funding, ie the state. They have multiple sources of funds which increases their autonomy by reducing their dependency on a single financial source. His fourth and fifth elements are the development of entrepreneurial units ie profit making elements attached to the university, and the integration of an entrepreneurial

culture. Profit should not be a dirty word for entrepreneurial universities. As with any other institution, universities cannot afford to operate at a loss and will face closure if they do.

From this point of view collaboration with industry offers multiple opportunities. There is the opportunity to make a 'profit' from the collaboration, which in turn can support other areas of the university which are yet to realise their profitable potential. There is the opportunity to expand the funding base of the university so it is not so dependent on dwindling public funding; and there is the opportunity for the university to benefit from the ongoing income afforded to intellectual property rights assigned to such collaborations.

These opportunities are matched with threats. The biggest threat is perhaps that of losing 'control' of the knowledge production process, implying a threat to the concept of academic freedom.

3.2 Collaboration for Production of Knowledge

Gibbons *et al* (1994:19) refer to the new production of knowledge as being mode 2, 'enquiry which is oriented towards contextualised results', transdisciplinary and controlled by success, efficiency and usefulness. Mode 1 was the traditional, disciplinary research set in a cognitive context. Gibbons, like Clark above, recognises the need for alternative funding bases and views the application of research as a key opportunity.

This is not to say that there is no longer room for research with no obvious profitable application. Niblett (1974:151) while recognising the demand from industry and Government for intellectual abilities to be used instrumentally, nevertheless makes a strong case for the humanities:

> To 'touch the top of a student's head and never his heart and senses' will not be enough; neither, however, will be an appeal to the heart and senses that bypasses the head.

The essential element to retain with regard to the production of knowledge in universities is the element of academic freedom. Academic freedom refers to 'the insulation of professors and their institutions from political interference' (Kennedy, 1997:1). The small 'p' in the political elements gives room for a broad range of influences including both government and industry. The academic freedom amendment to the Education Bill in 1988, proposed by Lord Jenkins, claimed for academics:

> the freedom within the law to question and test received wisdom, and to put forward new ideas and controversial or unpopular opinions without placing themselves in jeopardy of losing their jobs or privileges they may have at their institutions.

The results of academic freedom may be of great value. The Japanese Ministry of International Trade investigated the national origins of inventions of commercial significance between 1945 and 1985 and found 55% of them to be British, 22% American and only 5% Japanese (Russell, 1993:40). So it would appear that academic freedom is not necessarily 'something for nothing' (*ibid*). Indeed, often the profitability of an invention is not realised for many years. The post-it note adhesive developed by 3M was shelved for a considerable amount of time because the research team were evidently trying to develop the ultimate adhesive rather than the undo-able redo-able adhesive!

The whole debate around knowledge generation in universities for industry is the paradigmatic question of knowledge for proof or knowledge for utility. Perkins (1966: Ch1) does not see the two as mutually exclusive. While the university in the Middle Ages was restricted to concern for what was (what Perkins calls 'old knowledge') rather than what could be ('new knowledge'), the modern university is concerned with knowledge acquisition, transmission and application (or research, teaching and public service). Elliott (1995:40) supports this view claiming 'the real value of research lies in the understanding that it

generates, not the knowledge'. Hence the proof in itself is of little value, it is the understanding, application or utility that is of value. He continues 'academic excellence and industrial usage are separate measures of any research project, and it is possible to select projects that score highly in both' (p41).

From a historical view point, Cardinal Newman (1853:discourse 5) argues 'knowledge is capable of being its own end'. He claims that liberal knowledge:

> stands on its own pretensions, which is independent of sequel, expects no complement, refuses to be informed by an end, or absorbed into any art, on order duly to present itself to our contemplation.

In discourse 7, he claims that 'intellectual culture is its own end; for what has its end in itself, has its use in itself also'. As such he sees liberal education as encompassing utility education. The pursuit of proof has its own utility and therefore the two are not opposing ends of a dimension.

Jaspers (1960:Ch 7) takes a definitional rather than judgmental approach. He views the development of knowledge as being classified along five dimensions of opposing elements:

1. Theoretical or practical studies - the subject is an end in itself or the realisation of practical ends.
2. Empirical sciences or purely rational sciences - real objects in space and time or concepts intelligible once they can be derived.
3. Natural sciences or cultural sciences - ascertaining causation or ascertaining purpose or meaning.
4. Science concerned with general laws or historical science - universal science or historical.
5. Basic sciences or auxiliary sciences - concerned with the whole of knowledge or concerned with a practical purpose.

Clearly the nature of the knowledge and the use of the knowledge are viewed as being at opposite ends of the scale.

Minogue (1973:94-95) agrees. He identifies academic inquiry as a human process rather than an industrial process, distinguishing between the academic and practical worlds as akin to a grammar book and a phrase book. He believes that in moving from one to the other, a

hypothesis becomes an assumption and a philosophical argument becomes a justification. He does, however, concede that 'everything academic began its life in the practical world, however remotely.'

Barnett (1990) believes that higher education is facing a crisis in the way it is understood and that its fundamental principles are being undermined. He believes that objective knowledge is being replaced with useful knowledge, competence and enterprise. This is clearly of concern to him, as it is to Peter Scott (1984). Scott argues for the return to liberal education claiming that:

> the most important product of the medieval university was clearly the idea itself of a university, and the separation of intellectual authority from the political power on which this depended. (1984:26)

It is not just the political power that poses the current 'threat' to universities, but also the industrial power.

Collaboration with industry with regard to research has its proponents as well as its opponents. Those supportive of the philosophy surrounding liberal education will see little benefit from the production of useful knowledge - what Scott (1984) refers to as knowledge as a product rather than knowledge as a process - and they look to the historical roots of universities to justify their stance. Their opposition, on the other hand, argue that the role of the university is changing or has changed, and use current, contextual arguments to support their views. The two do not need to exist in splendid isolation, they can exist side by side. The danger is that they will not, and this leads us to the first area in which the university and industry will take competitive stances.

3.3 Competition in Stakeholders Demands.

Every organisation is ultimately a reflection of its ownership. A public corporate body is a reflection of the Government's desires with regard to that industry; a private corporate body is a reflection of the shareholders' desires for the company; and a university is a reflection of the students' (public's) wishes, for ultimately they will walk with their feet and go elsewhere if the university is not producing the service they require.

This separation of ownership and control is discussed by Jaspers (1960)who views the relationship in part as inseparable. He holds that universities owe their whole existence to society for which research is the payback and academic freedom is defined within very clear boundaries:

> Academic freedom means the freedom of student and teacher to do research in their own way and teach as they see fit. As for actual subject matter, that the state leaves to each individual. This defines the freedom which it guarantees against all interference, including its own.....It does not mean the right to say what one pleases. (Jaspers, 1960:142).

In the corporate university this academic freedom does not exist as the private corporation sets the academic agenda. In corporate - public university partnerships this academic freedom is limited as the corporate agenda influences the university's operations. Wild (1999:vii) suggests that the role of public universities in these partnerships is to bring 'academic substance, quality, transferability and standing to what otherwise might be a particular company training initiative.' British Aerospace (1999a) claim they achieve 'balance' between the academic content brought by their partnership organisations with the unique requirements of the company. Whether or not they can achieve this will depend largely on whether or not the partnership organisation allows them to. With such partnership

arrangements being so lucrative to public universities a loss of a little control may seem a small price to pay at the time but it goes against the fundamental principle of separation of ownership and control in universities.

While discussion has been broad regarding collaboration for funding and purpose with respect to knowledge generation, more specific focus is necessary when investigating areas of competition. In particular, focus settles on the corporate university.

3.4 The Idea of a Corporate University.

In order to position the corporate university, a brief recap of some of the early philosophy surrounding the idea of a university is necessary. Newman (1853:1) starts his philosophy on education by stating 'university is a place of teaching universal knowledge'. The object of the education was initially intellectual and moral, and 'the very name of University is inconsistent with restrictions of any kind.' (*ibid*:25). Newman goes on to develop nine discourses which support the ideal that 'truth is the object of knowledge' (p.41) and reason is the means by which this is achieved. He argues strongly for a university based on liberal educational principles claiming that 'knowledge is capable of being its own end' (p.78). With regard to any vocational element Newman claims:

> intellectual culture is its own end; for what has its end in itself, has its use in itself also.....therefore liberal education encompasses utility education. (p.115)

Jaspers (1960) brings a more scientific perspective to the idea of a university. He views the university as:

> an institution uniting people professionally dedicated to the quest and transmission of truth in scientific terms.
>
> Because truth is accessible to systematic search, research is the foremost concern of the university.....The university's second concern is teaching, because truth must also be transmitted. (p.21)

This contrasts with Newman (1853:1) who viewed the role of the university primarily for the 'diffusion and extension of knowledge rather than the advancement'. Newman viewed the role of the university as developing a 'philosophical habit' (p.77) in its students while Jaspers (1960) views the university as a research and dissemination institution providing 'a kind of knowledge which is methodical, cogent and universally valid' (p.21). As such he suggests that three elements are required at a university and the three cannot exist in isolation. The spirit of the university would perish if any were absent:

1. professional training
2. education of the whole man[1]
3. research

Taking these three criteria literally it could be argued that large organisations such as British Aerospace, Hoffman La Roche and IBM could be classified as Universities. They all offer professional training to members of staff. They all undertake research and development in their fields. With regard to the education of the whole man Larsson (1997) views learning as the responsibility of the individual observing that everyday life is enough in itself to produce a widening gap in knowledge between those who choose to learn and those who do not. Even without educational intervention, learning will occur because it is a part of every person's everyday life. Hence provided the employees take responsibility for their own learning they could develop their education 'of the whole man' simply through their experience of work and life. Clearly this is not what Jaspers intends as it opens the door for

[1] It is interesting to note that while Jaspers claims the ideal of uniting 'people' above, he chooses to use the word 'man' when defining the outcomes. This may stem from the historical development of educational philosophy and the wide use of 'the educated man' as a concept, but may also suggest that despite writing in the 1960's, Jaspers was somewhat removed from the radical voices at that time.

every organisation to call itself a university. Hence there is a need for all three tasks to be undertaken at the university by the same people, although everyone need not necessarily do everything.

This narrows the scope somewhat within organisations but does not necessarily rule out the corporate university. The BAe Virtual University, founded in April 1998, for example does not restrict itself to the provision of education and training but the wider scope of employee development and technology research (BAe 1998). The British Aerospace University, however, functions as an intermediary link between the organisation and academic institutions which is why their university is only 'virtual'. The networking structure is the 'virtual' element. The 'university' element is the public universities with whom the organisation is collaborating.

Despite its dependence on the university sector the BAe Virtual University has a clearly stated mission which has little to do with the liberal idea of the university proposed by Newman or the foundations set down by Jaspers. Kenney-Wallace (1999) describes the Virtual University as 'a business strategy towards international competitiveness', based upon British Aerospace becoming 'the Benchmark' through individual and corporate learning, research and technology, and its mission is 'to tailor learning and technology acquisition across British Aerospace in a far reaching initiative to secure the Company's competitive position in the next millennium' (BAe, 1998). Newman's rhetoric on restrictions being inconsistent with universities is challenged here. The 'tailoring' of learning and technology acquisition for competitive advantage is not merely restrictive but prescriptive and is contrary to fundamental liberal principles of education.

While the BAe Virtual University may set out with the best of intentions with regard to education and development of the workforce, its mission is restricted by the boundaries it sets

itself and as such, despite its close links with the public university sector, it is difficult to see how it can truly regard itself as falling within the ideological bounds of what constitutes a university. The title of university in this instance could be a marketing tool to encourage buy-in to the education and training programmes that the company wants to run. As such, Dr Kenney-Wallace (Managing Director and Vice Chancellor of the virtual university) claims 'It captures the imagination of BAe staff. I think it's a wonderful thing in society to create a deeper love of learning' (Midgley, 1999:vi). While everyone in education would heartily support the final statement it is questionable whether giving a workplace education initiative the title of university would achieve this. As David Thomas, Head of Leadership and Capability at British Telecom, claims 'a corporate university is not a geographical place, a corporate training department (except in the United States), or a real university. ... The corporate university is a good brand, and Americans are good at brands' (Thomas, 1999).

Actually defining what a corporate university is still remains a difficult task. Wild and Carnall (2000:5) define the corporate university as being formed

> when a corporation seeks to relate its training and development strategies to its business strategy by co-ordination and integration and by the development of intellectual capital within the organisation in pursuit of corporate aims and objectives.

Harrison (1996, 2000) would argue that this is simply 'best practice' in the field of employee development, although this itself is a concept she finds difficult to evidence. Meister (1998) takes a fairly contentious view setting corporate universities against public provision by suggesting that they developed out of a dissatisfaction with post-secondary education combined with a need for life-long learning[2]. Thomas (1999) takes a much broader view suggesting it may be all or any of the following:

- a partnership with universities and other suppliers.

[2] Meister's research is based on research on US corporate universities.

- a focus for learning and development for employees.
- a system of knowledge management.
- a centre of excellence.

While this may help clarify the direction or philosophy of the corporate university it is still broad enough in its scope to include such a multitude of activities that any business could claim to be operating as a university. Perhaps this is the point! Nokia, Ericsson and Enrom are all in the fast moving worlds of datacoms and telecoms. The rate of change in their market place is phenomenal and their vision of the 'corporate university' was very different. Firstly these companies saw no need to call it a corporate university at all. Secondly 'it' had to be a flexible framework that adapted with the pace of change and allowed people to develop, capture and share knowledge in new ways. Finally they did not want to re-invent the wheel in any way whatsoever. They view the international university market as something to draw on rather than recreate. The Unipart U or BAe Virtual U models were too static for them. Each model or configuration, however, has its place; the Nokia vision would have been inappropriate at Unipart for example.

While these differing perspectives offer variety they do not help in defining the concept. Perhaps it would be better defined as a set of continua, including for example:

1. Bricks and Mortar through to Virtual (Thomas, 1999).
2. Encompasses some employees through to encompasses all employees (Ball, 1999).
3. Produces measurable benefits through to produces a feel good factor (*ibid*).
4. Is a corporate training department through to being a system of knowledge management.
5. Is self-contained through to works solely in partnerships.

Where each organisation fits on each continuum is for them to decide. Essentially the corporate university is the mechanism by which organisations are trying to make learning part of everyday activities so that they can become 'learning organisations' acting as agents of change (see, for example, Pedlar *et al*, 1991). Arguably, these continua could be equally applicable to systematic training approaches practised within training and development departments, rather than being specific to corporate universities. Indeed Wild and Carnell (2000:5) outline what they see to be the characteristics of a corporate university as:

- Demonstrates that an organisation takes investment in training and development seriously.
- Offers a range of training and development programmes to different roles and levels within a company.
- Offers the ability to gain qualifications at various levels of educational attainment.
- Has close tailoring of educational content to both strategic and immediate topical needs of a particular organisation.
- Encourages genuine partnerships between organisations and business schools, with the latter responsible for calling on wider expertise from beyond if needed.
- Features a range of delivery methods.
- Has an ability to deliver consistent strategic training and development for a single organisation across all its international units while also recognising local needs.

A well run training and development department which has established good relations with its local university and fulfils the Investor in People (IiP) standard would meet these criteria without the need for the corporate university title.

Walton (1999) recognises three phases of development in the corporate university sector: first generation corporate universities typically offered specified training modules, much like a corporate training centre, for example Disney University; the second generation saw expansion into a broader framework of education and human resource development,

attempting to embed work based learning such as from TQM initiatives, for example Motorola University; the third generation are the virtual universities which view the concept as a process rather than a campus. Their development has moved from training centres to a learning process, and the developmental focus has shifted somewhat from the organisation to the individual for the organisation.

Barnett (1990) raises the question of what does and what does not fall within the bounds of a legitimate subject for the academic community to study. Over the last 100 years various professional studies have joined the natural sciences and social sciences in Universities and the process of study has been widening. One of the many offerings of knowledge presented by Barnett is that of knowledge-oriented activities producing a developmental process which, as a process, is not value-free (pp.43-44). Given this, the subject matter of the corporate university may fall within the bounds of knowledge accepted within the public university sector, although whether the criteria regarding objectivity would be met may again be dependent on the degree of separation of ownership and control.

Pattison (1965) distinguishes between the 'lower states of education' and what he refers to as 'superior education' in his exploration of the university. In the former the student is passive and the education does not touch his mind.

> His understanding is exercised in bare apprehension of given facts and relations. His will is exercised in prompt obedience to a rule (p126).

In the latter the mind is roused as it becomes conscious of a force within itself which becomes active; combining, analysing and imposing itself on phenomena.

> This is the life the Higher Education aspires to promote, this is the power which it cherishes and cultivates, this the faculty to which it appeal. (Pattison, 1965:127).

Pattison's ideas build on Newman's ideas of 'intellectual culture' (1853:101) and Jaspers's ideas of educating the whole man. 'Man's humanity requires his realisation of the absolute. Without it all would be meaningless' (Jaspers, 1960: 64).

The attainment of this level of educational achievement in the corporate university is rare. It is not what the corporate university is aiming to achieve although elements of it may occur as a by-product. The Unipart University, for example, offers around 180 different courses which have been designed and are taught by Unipart managers and staff (Unipart, 1999). While there may be elements of superior education and intellectual culture within this, it is not the aim of the 'university' and it is certainly not the desired outcome. The Unipart U's mission is "to develop training and inspire people to achieve World Class performance within UGC (Unipart Group of Companies) and amongst its stakeholders" (*ibid*). It is improved performance which is the focus of this university not improved intellect. While improved intellect may lead to improved performance the relationship is not necessarily reciprocal.

Cable and Wireless College has been in existence in its Coventry Campus since 1993. It offers a range of courses along similar lines to the corporate universities but focuses specifically on communications angles. Somewhat uniquely it also offers courses on an open access basis. It, however, maintains its title of college rather than adopting the popular university title. When asked why, their answer was simply "We're not an academic institution". Pushed further they said that they do not award degrees and it would not be their intention to do so. It became apparent on further questioning that there had never actually been a conscious decision taken not to become the Cable and Wireless Corporate University. The point had never been raised. This conclusion is drawn on the basis that when asking the question regarding the title of the college to both the college and the head office, nobody knew the answer, became mildly hostile to the question and then passed on to someone else

who would possibly be able to help. Clearly the question had never been asked because at Cable and Wireless, universities were regarded as 'academic institutions' and colleges were where training took place.

The BAe Virtual University does meet the requirement of 'higher' levels of educational attainment. Its prospectus (BAe, 1999b) offers a wide range of degrees at Masters level as well as professional qualifications and courses. This is largely the result of its 'virtual' nature as it is merely a framework organisation for developing partnerships with public education providers and tailoring or 'balancing' their courses with the organisation's needs (BAe, 1999a).

The one area in which all corporate universities converge is that of the usefulness of the education provided by the institution. The Unipart U offers 180 courses which have been developed and delivered by Unipart managers and staff. They claim that the 'courses are designed to be practical so that attendees "train for work" and can apply "this morning's learning to this afternoon's job"' (Unipart, 1999). The BAe Virtual University offers learning opportunities which are 'relevant to the business' (BAe, 1999) and has even gone so far as to develop a bespoke engineering degree with Loughborough University to meet a specific need of the business (Midgley, 1999:vi). GEC are similarly developing an MSc in International Technology Management which will be delivered and awarded by three different universities in three different countries with Warwick University being responsible for overseeing the quality of the programme (Davies, 1999). The Motorola University has the objective of being the 'preferred provider of choice for Motorola's educational content, services, learning solutions and support' (Staunton, 1999). Motorola University adopts the slogan 'right knowledge, right now' and sets out to prove that they are better than local

providers when it comes to educating Motorolans (*ibid*). They even have the Motorola University Press!

While they do all have their own peculiarities, there are some elements of common ground which can be summarised in comparison to the UK traditional public sector university as follows:

	Public University Sector	Corporate University
Title	Originated from scholarly community development into corporations named Universitas.	Title conveys culture & community of learning developed in-house.
Historical Account	Medieval / classical roots. Development of old uni sector 17-19th century, new uni sector 20th century, mass expansion.	Developed from in-house training and education departments; offering new services, creativity, research & development.
Aims	To provide liberal and/or professional education at a 'higher' level to the public.	Expand the knowledge base of their companies, adding to competitiveness, acting as catalyst for change.
Outcomes	Qualifications (degrees, professional qualifications) & Research.	Raised horizons on what can be achieved, conveys the ethics, values & history of company.
Level of Ed.	Undergraduate, postgraduate and doctoral.	Any from low level functional training to postgraduate study through partnerships.
Size & diversity of student body	Any member of the global public who fulfils the entry requirements.	Every employee in the organisation, some guarantee a minimum amount of training per year.
Knowledge generation	Mode 1 production of knowledge. Some mode 2 through industry partnership arrangements. Published for public consumption, peer reviewed.	Mode 2 production of knowledge. Research shared with partner organisations, in-house publication. Not publicly published.
Ownership & Control	'Owned' by the State in terms of funding. Reports publicly & is accountable to state organisations. 'Control' is loose due to concept of academic freedom.	Owned by the company, control varies according to the decentralised nature of in-house buying. Always has to be some business justification.
Links with public universities	Primarily collaboration exists in research projects.	Links regarding delivery of accredited courses and some research.

Table 3.1: Comparative analysis of the public and corporate models of 'university'. (Blass, 2001)

The major defining difference between the public and corporate universities is the composition of the student body and the question of access. Corporate universities only offer course to their employees. Access is denied to the wider population beyond the payroll. Public universities are currently increasing access, offering Higher Education opportunities to greater numbers of people.

Even greater difference can be drawn between the two if attention is turned to their stakeholders. Kerr (1963/1995:31) introduces the idea of the 'multiversity', being 'a city of infinite variety'. Essentially the university has multiple stakeholders, all of which require different outcomes, and as such he recommends that a certain amount of confusion exists 'for the sake of the preservation of the whole uneasy balance' (*ibid*:14). Table 2 demonstrates this stakeholder complexity for a British University:

Stakeholder Group	Input	Output
Central Government	Money	Services (chiefly graduates)
Employees	Labour, Time	Money
Industry/Employers/ Shareholders	Research contracts, sponsorship	Research findings, employees
Local Government	Money	Services
Professional Institutes	Advice, Money	Members, courses
Research Councils	Money	Research findings
Students	Money, Effort, Time	Education
Suppliers	Goods/Services	Money

Table 3.2: Stakeholder Analysis for a Public University.
Source: Allen (1988) The Goals of Universities. p27.

Clearly there are numerous stakeholders with differing inputs, all requiring different outputs.

A stakeholder analysis of a corporate university would tell a different story:

Stakeholder Group	Input	Output
Central Government	None	Better educated labour force
Employees	Labour, Time	Money
Industry/Employers/ Shareholders	Investment	Profit (through increased output)
Local Government	None	None
Professional Institutes	None	None
Research Councils	None	None
Students	Effort, Time	Education, training
Suppliers (including public Universities)	Goods/Services	Money

Table 3.3: Stakeholder Analysis for a Corporate University.
Adapted from: Allen (1988) The Goals of Universities. p27.

Now the reflection of their ownership is clearer to see. When they are working in collaboration, their stakeholder requirements may be competing, and the goal of longer term research findings in the public university may be competing with the short term profit goals of the corporate partner. Elliott (1995) is quick to draw attention to the fact that exploitation of intellectual ability does not equate to exploitation of intellectual property rights. Ownership of intellectual property rights associated with collaborative research is an area of concern raised by many writers (see for example Marceau, 1996; Barden, 1993; Gregory, 1997).

3.5 Competition in Provision of Service

At the present time there is no central degree awarding authority. Since the disbandment of the CNAA, universities have conferred their own degrees. The system of external examinerships, and the regulatory frameworks of the QAA and HEFCE have provided some form of comparability between institutions but essentially a university governs its own degree awarding process. As such, if a corporate university wishes to afford qualifications to its students, it needs to do so in partnership with a public university. This is the key to the BAe

Virtual University. It works in partnership with universities to provide qualifications, usually at professional and post-graduate level, which are focused to the needs of the corporate body but are provided and accredited by the public body. The question arises as to what would happen if a central degree awarding power was reinstated. How many of the corporate universities would apply for the award of degree for their in-house education provisions? Some, in fact the majority, including Unipart and British Aerospace, deny any desire to go down this route. They feel they have more to gain from working in partnership with public universities. Others, however, do not share the same view. Motorola clearly indicated that they would by-pass the middle man, ie the public university, and provide everything themselves. They espouse a great deal of confidence, or arrogance, in their ability to provide better education than the public university sector.

While this may appear a moot argument at the moment, as Britain has no central degree awarding power, the moves towards ideas such as a central board of external examiners could take us dangerously close to the mark. If the public universities lost their monopoly in degree awarding powers, the market place would change rapidly, and new areas of competition would need to be addressed. No longer would one university be competing with another, but they would be competing with industrial providers who would be offering qualifications and paid work at the same time.

3.6 Competition in Response to Change

If one is tempted to believe the Ancient Greeks, then 'change is the only constant' and as such can be planned and sequenced as a rational model. Mintzberg (1987) disputes this arguing that while a rational model of change may be acceptable, an alternative emergent approach is feasible, beginning with the assumption that change is continuous, open-ended

and largely unpredictable because of the changing environmental context of the organisation. This applies as much to an educational establishment as it does a competitive business organisation.

Dalin and Rust (1996) discuss a knowledge explosion and obsolescence, claiming we are moving from manpower to brainpower. They identify ten revolutions for the 21st century:

	TEN REVOLUTIONS:
1	the knowledge and information revolution;
2	the population revolution;
3	the globalising and localising revolution;
4	the social relationships revolution;
5	the economic revolution;
6	the technological revolution;
7	the ecological revolution;
8	the aesthetics revolution;
9	the political revolution;
10	the values revolution;

Fig 3.1: Ten Revolutions. Adapted from Dalin and Rust (1996: 31-33)

These revolutions will be global and impact on industry and education. The challenge will be for universities to adapt to these changes fast enough to keep up with industry. The head of one corporate university interviewed claimed that while they had no immediate intention of competing with the public university in the provision of education, and while they preferred the partnership model, if the public universities could not keep up with their demands, then they would have no option but to fulfil them themselves. They recounted a difficulty they had in finding a university which could start delivering a new course for them in six months' time, the majority wanted a year. A year was too long and too late. If the public universities do not respond to the changes necessary with regard to the provision of education in the right time frame, the corporate universities will.

To quote John Kay:

> The decline in IBM was not the result of a declining demand for computers, and Pan Am did not go bust because people stopped flying. The failure of these companies followed not from the disappearance of their markets, but from their inability to see or respond to the changes taking place within them (Mayo and Lank, 1994).

It is not simply a question of change, either. It is a question of the right change, at the right pace, for the right customers. If the university sector embeds itself in tradition and fails to meet the opportunities the market offers, new players will come into the market. Halsey (1995) offers a retrospect on the decline of the 'Donnish Dominion' of Oxbridge. Essentially he highlights the fall in public and political prestige of academic work, deteriorating conditions of work, decline of autonomy of institutions, falling salaries and loss of tenure. A different picture to the entrepreneurial universities such as Warwick and Strathclyde.

Fullan (1991:345) states:

> The shame of educational change is the squandering of good intentions and the waste of resources in light of personal and societal needs of great human consequence. The capacity to bring about change and the capacity to bring about improvement are two different matters. Change is everywhere, progress is not.

If the university sector does not adapt to respond to change quickly enough, the corporate sector will take its place.

3.7 Collaboration Influencing the Future

Many articles have been published trying to establish the respective benefits to industry and universities from partnership activities (see for example Barden, 1993; Gregory, 1997; Marceaus, 1996; and Kells, 1989). While they highlight the benefits and some of the stumbling blocks partnerships have to resolve, the implications for the future in terms of how these benefits reshape education are largely ignored. Drawing on their evidence, it is possible to summarise the situation as follows:

Partnership Activity	Benefits to University	Benefits to Industry	Implications for the future of universities
Research Inputs	Access to real world problems and long term research projects	Access to company specific research	Changing nature of research, knowledge production is primarily Mode 2
Research Outputs	Secure funding by putting research output to work, ie possibilities of IPR	Early awareness of discoveries, exploitation of results	Conflict of university desire to publish discoveries and industry desire for privacy for competitive advantage
Sponsorship	Additional specific funding for Chairs, lectureships, etc	Good PR and additional impetus for research focus	Question of what the expectations are if you are funding the professorship
Continuing Education	Secure funding by provision of in-house qualifications	Alliances increase provision of continuing education	Industrial influence on continuing education curriculum by buying in provisions for in-house cohorts
Placement Students	Secure sources of placements	Recruitment mechanism re talent spotting	Industrial influence on undergraduate curriculum by feeding back to universities what it is they are looking for

Table 3.4: The benefits of partnership and their associated implications for the future of education.

The implications derived from analysis of current collaborative enterprises show a clear path for future collaborations.

- *Research Inputs.*

The shift to Mode 2 knowledge production (Gibbons *et al*, 1994) will essentially change the nature of university research. There will be the need for a foreseeable outcome from research from which a benefit can be derived either in terms of intellectual property rights for the university, or an industrial use for the partner organisations. This moves research away from the liberal idea of knowledge for its own ends.

The nature of research funding is also changing as funding for projects with indeterminable outcomes is disappearing. Mode 1 production of knowledge (*ibid*) is fast disappearing, and research for the sake of discovery is a luxury that universities cannot afford to support.

- *Research Outputs.*

The publication of research findings is also changing. In collaborative projects, industrial partners benefit from the early access to the findings, and they aim to exploit these for maximum profit - that is the fundamental aim of corporate research. Academics, on the other hand, benefit from publishing their work, and the international recognition and esteem that publication affords them. Universities also benefit in terms of the research assessment exercise (RAE). This situation is already changing. Corporate research projects will be recognised in the next RAE, even if their results never get published for public consumption.

- *Sponsorship.*

The provision of sponsorship of a Chair or lectureship raises questions around ownership. While there are substantial public relations benefits to be afforded to sponsoring academia, perhaps the greater gains for industry are to be achieved through the work of the sponsored employee. It is another reason for focusing research; for not publishing the results but exploiting the discovery instead; for ensuring that only 'useful' research is undertaken.

- *Continuing Education and Placement Students.*

The influence of industry on the curriculum can be direct or indirect. If a company employs a university to provide an in-house bespoke course resulting in a qualification specific to their organisation then the corporate influence on the curriculum will be large. The university will be left with the challenge of adapting the corporate curriculum to meet the level required by the qualification framework. Other areas of influence on the curriculum are more subtle. The companies that employ placement students, for example, require students with certain skills. It is up to the university to ensure that these are developed prior to the students applying. Graduate recruiters have a similar influence, as one of the ways in which universities are

measured in the league tables is on the ability of their students to find employment on completion (THES, 2000). Not meeting the expectations of industry is a costly exercise for universities.

It is easy to draw conclusions that this situation is undesirable; that it is the exploitation of education for industry; that it is moving the public university away from its liberal roots to a commercial, utility framework. This is not necessarily the case. The changing funding base of higher education in Britain has meant that universities have had to adapt to survive. There always has been and always will be an economic imperative to education, and the move towards collaboration between industry and universities could be an indicator of improvement in addressing the economic imperative.

The danger lies, as it does with everything, in things being taken to an extreme. If all research was company driven; if all teaching was company specific; if students stated their desired employer when enrolling and their education was tailored to that employer's needs throughout their studies; should these extremes occur, then the public universities will have taken on the role of the corporate university and the traditional public access university will become a model from the past.

3.8 A Model for the Future

Clearly there is a model emerging that may cause some concern to public universities, but it would not take much for the model to be transformed into an alternative:

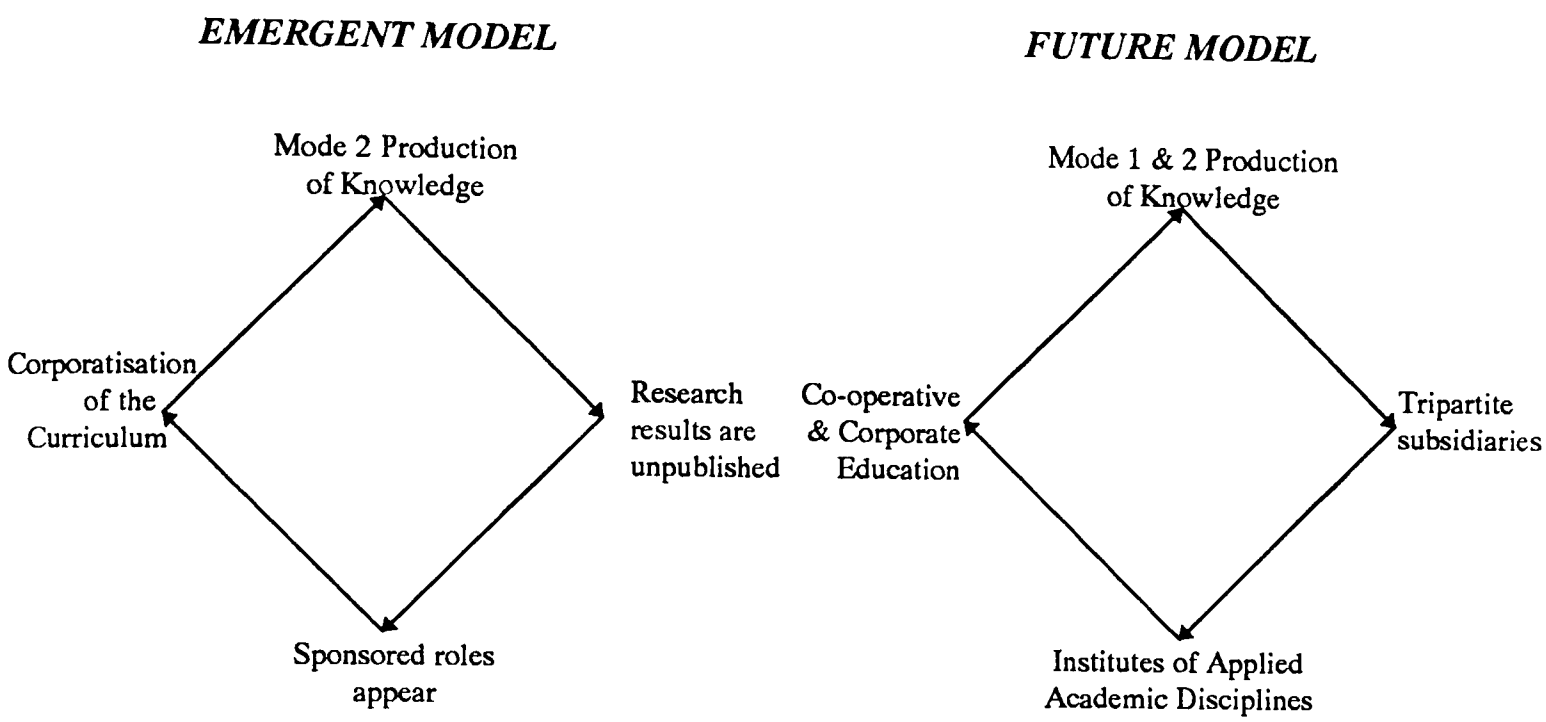

***Figure 3.2*: The emergent and future models of the 'Corporate' University.**

3.8.1 Tripartite Subsidiary Companies.

Perhaps the biggest area of contention, because it potentially yields the greatest financial benefits, is the area of research. Who owns the intellectual property rights of collaborative research projects? The exploitation of the knowledge produced does not have to mean the exploitation of the knowledge producers. Some universities are quick to ensure that they own the intellectual property rights, for example Strathclyde University (Clark, 1998). Other universities are seeing the growth of small on-campus enterprises set up between academics and the university, for example the CEM centre at the University of Durham (the curriculum education and management centre). The future will probably see these enterprises being tripartite - that is their ownership will lie with the academics, the university and industrial partners. Essentially they will be joint ownership subsidiary companies, and they will hold the intellectual property rights derived from their investments in research.

3.8.2 The return of Mode 1 production of knowledge.

There may also be a move back towards some Mode 1 production of knowledge (Gibbons *et al*, 1994). As research becomes more and more focused on trying to meet specific outcomes, then tunnels of knowledge will exist in voids. Exploration of tangent areas will emerge as necessary to complete the whole picture, and the value of research for discovery and innovation will emerge once again. In his book 'The Digital Economy', Tapscott (1996) paints a picture of a future where change is happening so fast, jobs will re-invent themselves in 12 month periods. Keeping pace with this change requires continuous learning, but when all the learning is focused on the future and none is focused on checking the present, gaps emerge and crises occur such as the British Beef Crisis or the hole in the Ozone layer. More Mode 1 knowledge production could have prevented some of these crises. Not taking the time to bridge the gaps will become increasingly expensive for industry, especially with the move towards recognition of 'corporate manslaughter'. Asking the unaskable and finding the answers will reappear on the corporate research agenda, and this can but benefit universities in partnership with them. Mode 2 production of knowledge will also continue.

3.8.3 Co-operative and Corporate Education.

Undergraduate education is another area where the future may see yet more change. Already there are increasing numbers of undergraduate students in Britain, and an undergraduate degree is seen by many students as a necessary condition to secure gainful employment. As degrees become more commonplace, employers are wanting work experience also. While some courses offer placement years, others do not. Waterloo University in Canada offers co-operative education in the form of a 5 year degree, in which some of the studies take place 'on campus' and others take place in 'industry' (Seltzer and Bentley, 1999). This model of provision requires good collaboration between the university and its partner organisations to

ensure that each is providing a meaningful experience of use to the other and to the students. This model of provision is a collaborative model for the future, and one which Britain should endorse sooner rather than later to remain competitive in the global education market.

There may also be time when we see the development of corporation specific education. It is already evident in the postgraduate market with the advent of the corporate classroom (Macfarlane, 1999), however as yet there are no undergraduate Bachelors degrees in, for example, BAe Aeronautical Engineering.

3.8.4 Institutes of Applied Academic Disciplines.

The co-operative education model will not be applicable to all disciplines. Not every discipline has a direct application to partner organisations, and this does not detract from the value of education in that discipline. It simply means that it is 'different'; not more or less difficult; not more or less worthy; not harder, nor easier; simply different.

The differences between the applied academic disciplines and the 'pure' academic differences will become greater as time progresses. The applied nature of some will require greater collaboration, and the pure nature of others will ensure they are distant from collaborative partners. Models of collaboration already exist. University medical schools collaborate with hospitals. University veterinary schools collaborate with veterinary practices. Teaching colleges collaborate with schools. These collaborative arrangements will expand in the future and engineering, business schools, applied sciences, and so forth will align themselves more closely with their application than with their pure academic foundations. If they do not, the corporate universities will, and the students will move away from the public universities for their applied studies.

This difference between the 'pure' and 'applied' academic disciplines will result in very different ways of operating, different value sets, and different priorities. The two will ultimately conflict with each other as a common operating system will not be feasible. The applied disciplines will need to change continuously and will not survive the restrictions of current university bureaucracy. As such the two institutions will split, and while they may be mutually supporting regarding inputs such as sharing funding, resources, staffing links and continuous development, they will need to operate as autonomous units in terms of their outputs. Neither will necessarily be 'better' than the other, they will simply be 'different'.

3.9 Conclusions

There is a danger with the expansion of the higher education sector that public universities become 'schools' pushing through qualifications while industry becomes the hive of innovative research and development pushing forward the bounds of knowledge. Indeed it is questionable how far down this road we have travelled.

The corporate universities may have something to offer in terms of learning communities, and they may be having great success in stimulating people to learn who previously would not entertain the idea.

There is an essence of grandeur about the term university; its historical roots in Oxford and Cambridge; the pomp and ceremony surrounding degree confirmations; the spirit of the student and the joy of 'student days' enjoyed by so many now at the decision making end of organisations. Maybe it is this that the corporate universities are trying to capture. British Aerospace certainly provide lavish award ceremonies where they distribute certificates to their employees and their achievements are celebrated. Unipart University have certainly

stimulated and developed a 'can do' culture from a defeatist start point drawing out the 'go on' daringness that many undergraduate students have before it is stifled by experience. Clearly the corporate universities are developing the boundaries of knowledge.

Within both the public and the corporate sectors there is diversity, and some convergence between the two. Warwick and Strathclyde in particular are emulating aspects of the corporate university; the latter with regard to 'useful' knowledge production, and the former with regard to exclusive learning communities (Clark, 1998). Within the corporate university sector there is also convergence towards working in partnership with public universities. Indeed Meister (2000) reports the 'development of innovative partnerships with institutes of higher education' as one of the results from the annual survey of US corporate universities and the corporate universities in Britain are also supporting this assertion (see, for example, BAe or Unipart, 1999).

Despite these areas of convergence the comparative evidence is clear. The corporate university and public universities are two very different configurations with different aims, outcomes and *modi operandi*. While there is certainly room for collaboration between the two, they will always remain separate entities. Even if a degree awarding body, such as the CNAA were to be re-established, the corporate universities of Unipart and BAe claim they would not seek to award their own degrees as they feel they would become too insular - although Motorola were not too sure! Clearly they serve different purposes and take different forms and both the public and the corporate universities would not desire to emulate the other. There certainly appears to be room for both in the education market place.

This said, however, from its historical roots, the university has taken giant steps in moving towards collaboration with industry. More steps need to be taken and more quickly if universities are to survive in their current forms. As these steps are taken, the realisation that

the current form is hindering the progress will lead to a split of the applied disciplines from the pure disciplines in the operating of the university structure. Collaboration may result in co-operative degrees, tripartite subsidiary companies, and a wealth of mode 2 knowledge production supporting mode 1 production on the side. The opportunities are vast for both the universities and their industrial partners, but as with all collaborations, care needs to be taken that both parties continually gain, rather than one gaining at the expense of the other. It is the development of the 'corporate' university collaboration that is desired, not the corporatisation of the university.

Chapter 4 - THE 'VIRTUAL' UNIVERSITY

While it may be that a corporate university takes a virtual format, such as British Aerospace's offering, the virtual university warrants discussion as a concept in itself. Exactly what is meant by a 'virtual university' is questionable. Is a university operating in a virtual environment a virtual university? What is a 'virtual environment'? For the purpose of this chapter these terms need clarifying at the start, although it is much of the research within this chapter that has led to the clarification of the terms. Perhaps the best starting point is the environment. The technology that drives the 'virtual' elements in our society is referred to as 'digital', so the lack of a digital framework of technology would prevent local populations from studying at a virtual university.

The extent to which a university is 'virtual' could be considered to be a continuum. Universities offering web-based materials to support campus taught students are starting to explore the ideas of virtual delivery; the open university and its transference of paper based distance learning to on-line resources is further down the virtual conceptualisation; and then there are the universities that operate in a purely virtual environment with no face to face taught delivery.

When considering the digital and virtual futures, a 'new' breed of students will be engaging in university study and their needs, wants and learning styles will be very different from the traditional models offered by most universities consisting of lectures and tutorials. In the US, for example, Crossman (1999:106) already claims that most people would rather talk to someone on the telephone than write to them; most people would rather watch TV than read a book; and most schools and most school children are engulfed in a deep literacy crisis with little hope of a breakthrough. He refers to a 'growing feeling of alienation to reading and

writing' as voice recognition software allows us to communicate and store information using oral language rather than written language.

The use of IT in education to create virtual learning environments leaves students in a Catch 22 situation. In order to be able to access the education you need to be able to access the IT, and for the IT to be accessible, you need to be educated. McDonald (1999:118) comments that 'everyone agrees that access to IT must begin with education' when considering the developing world being isolated from many of the virtual opportunities because they are not educated in how to access them.

Jobbins (2000:68) highlights World Bank concerns that a 'chronic lack of investment in higher education is leaving the developing world further and further behind.' But it is not just the developing countries that are being left behind. McLeod (2000a) reports that Edinburgh is agonising about a 4th university in the city. Boston, which has a similar population, has 65. Which city, he asks, has stimulated more start-up companies? (Boston!)

In terms of educational policy development, Britain is starting late in the virtual university market. While individual universities such as Huddersfield (Burnham, 2000), Staffordshire (Greenhalgh, 2000) and Derby (Brewer, 2000) have all developed and are continuing to develop virtual elements, it was only in March 2000 that the Government felt the need to invest in an 'e-university' for Britain (Tysome, 2000; Goddard, 2000a). Initially, the government's view was that a British e-university needed to include those with an international reputation (Goddard, 2000b) which puts the development squarely within the Russell Group, giving them £100 million extra funding to develop virtual resources although it would appear that the 'elite' are 'logging-out' of the project following a revised proposal (Goddard, 2000c).

So what drives virtual universities? Hines (1996) combines the terms information and technology to 'infotech', defining it as computing plus telecoms and networking. This includes 'expert systems, imaging, automation, robotics, sensing technologies and mechatronics (micro-processors embedded in products, systems and devices' (*ibid*:7). The technology that underpins this is digital signals, fibre optics, satellites and wireless technology, and developments in these fields are occurring exponentially. This is the medium, not the message.

Miller (1996:40) offers one perspective on how this digital technology has and will be used in higher education:

> In the traditional paradigm ...technology serves two basic purposes. First, it extends the reach of the institution, increasing student access to the instructional process. Second, it offers opportunities to improve the effective presentation of knowledge to students.

He argues that as education moves from a teaching to a facilitating role, technology's role changes. While technology can potentially continue to increase access, the nature of that access changes with the use of electronic media and the internet. This moves education to a 'media-rich learning environment in which different technologies are brought to bear on the goals of the curriculum itself' (*ibid*:41), in a way that is integrated, seamless and user-driven. While this may be forecast as the near future for open and distance learning, Miller predicts it is the long-term future of higher education generally.

While it is easy to get carried away on the sea of change in technology, Paul and Brindley (1996:53) give us a timely reminder that the technology itself can take over from the purpose the technology is trying to meet, citing for example, that 'too many distance education proponents will place the highest premium on technological toys without first determining

the learning needs of the students, the challenges of the particular discipline and how a given technology can address these directly.' In his book Jurassic Park, Crichton (1991) presents a chaos theorist warning of the dangers of the scientists being so excited by the fact that they could, they never stopped to question whether they should. The result in Jurassic Park was a dinosaur chaos that was beyond the control of the creators. The result in education could be a proliferation of qualifications and courses being offered to individuals and organisations with an inappropriate curriculum, through a media not suited to the recipient or the material. In essence, individuals could be inhibited from learning because educational providers have realised they 'could' do something without questioning whether or not they 'should'.

Laurillard (2000) insists, however, that an e-university should be a vision that links academics and research, not technology driving the knowledge provision. Such a development requires investment rather than cuts. Virtual universities are not a cheap option. Experience is showing that teaching costs are high and rewards low if quality is to be maintained (Marcus, 2000). Sally Brown, deputy principal at Stirling University warns that 'the notion that new technologies allowed teaching to be improved more cheaply was fundamentally misconceived' (Woljas, 2000). The virtual arena is more complicated than its first appearances suggested and hence this chapter focuses on developing and positioning the virtual university in the future.

4.1 The Development of the 'Virtual World'.

When William Knoke (1996) tried to make sense of all the change in the world happening at the same time, he concluded that we are no longer working in three dimensions, but in four (given a base line start point of zero);

Dimension	Characteristics
Zero Dimension	Early humankind that had self-imposed isolation but 'understood' a world of three dimensions.
First Dimension	Social interaction on fixed trade paths with neighbouring villages/silk road/amber route. Ideas and knowledge traded.
Second Dimension	The birth of empires and society. Age of discovery - roads, ships - free interaction over the Earth's surface.
Third Dimension	Development of space - airplanes, space travel, missiles - global interaction.
Fourth Dimension	Global government, placeless society, telepresence, silicon brains, the age of everything-everywhere.

Table 4.1: The Dimensions of William Knoke (1996:3-54).

In the fourth dimension, Knoke predicts that education will be in a multi-media environment, where anything that is not cutting edge will be done by simulation, recording or database access, and formal qualifications will disappear.

> Employers will be more interested in what a student knows right now, than what he once knew. Because of the advancement of knowledge, learning will become not a one-time event like a vaccination, but rather an ongoing process for life. (*ibid*:305)

The concept of lifelong learning should be good news for universities. However, the rapidly changing conditions which are making lifelong learning a necessity, and offering universities this huge opportunity for expansion, are a serious threat to the university bodies themselves. Lifelong learning is akin to a 'good virus'. It produces lots of extra work for universities, but will also kill them if they fail to adapt their antibodies to the virus's needs.

Tysome (2000:1) refers to the need for universities to meet the e-challenge. Reporting on the CVCP research into boundaryless education, he proposes that the effects of borderless education include:

- a customer-focused approach to education and training with more virtual learning.
- dissolution of boundaries between public and private, universities and colleges, education and training - raising questions of identity and regulation, and the corporate university.

- more specialisation and a narrow subject spread, potentially leaving university portfolios unbalanced and precarious.
- need for collaboration and increased use of branding to compete successfully.

The CVCP report spells out nothing new. Indeed, it is questionable whether or not the above effects are a result of virtual developments. The four could equally be a response to the growth of the corporate university concept. In fact, they may not go far enough. Arguably they are a third dimension response to a fourth dimension occurrence.

Toffler claimed as far back as 1970 in his book *'Future Shock'* that we are 'creating and using up ideas and images at a faster and faster pace. Knowledge ..... is becoming disposable'(p162).

The set curricula, examination assessment processes, and modularisation drive the university towards a knowledge absed education provision. Barnett (2000b) sees the fundamental problem in supercomplexity is not one of knowledge, but one of being. If knowledge is becoming disposable as Toffler suggests, then why is it still the basis of university education? Universities could be holding back society rather than driving it forward.

So if future universities are not about knowledge, what are they about? Essentially they will be 'gymnasia': centres in which people will go to exercise in particular the brain.

If we look at history, the abacus was seen as a great aid in the development of teaching of mathematics. People learnt to do mental arithmetic, to count, to solve problems of logic, to break codes (particularly during the war), and then to programme computers. The result of man developing computer programmes was that the majority no longer have to take many of

the fundamental basic steps. How many children now can do long division? How many shop assistants can work out the cost and change on your shopping if the cash till breaks down? This may not necessarily be a bad thing. Machines can do some of our brain's work for us more quickly and more accurately. They can calculate, but they cannot think. A division of labour can occur between machines and humans that changes the nature of the education curriculum.

Crossman (1999:111) argues that the "3 R's" of Reading wRiting and aRithmetic will be replaced by the "4 C's" representing Critical thinking, Creative thinking, Comspeak (the oral replacement for the written language), and Calculators. He refers to VIVOlutionary learning, representing 'Voice In, Voice Out' communication with computers. Teachers will not be obsolete in this model but their role will change significantly from the class teaching role currently practised. 'Teachers will act as intermediaries between students and the world of information, helping students draw on resources around the globe' (Hines, 1996:9).

The areas in which universities need to focus now are the areas that computers cannot yet simulate. This is the creation of thought, of innovation and creativity, and, of course, the further development of artificial intelligence so that we can replace yet more of the brain's calculative, processing work with computers. While a computer can make decisions on a logical basis, it cannot make decisions taking into account humanity, morality, citizenship and democracy. Essentially, universities will return to their normative roots; ideas of liberal education and the educated man (Newman, 1859) and moral education as tutored in the medieval universities (Dunbabin, 1999). Universities will, however, have to find a new way of doing this. It is not a question of going 'back to our roots', but of going forward to rediscover them in a new technological context. Therefore, it is not the development of

'thinkers' that universities will be developing, but 'cyberthinkers' - people with well-exercised brains which can operate in the virtual environment we have created.

4.2 Developing the 'Cyberthinkers'.

The development of cyberthinkers will lead to a new population of graduates. They will be quick at searching for information when seeking to make decisions; they will be well versed in electronic possibilities and how to make technology work for them; they will be driving forward the body of knowledge available electronically and will be finding better ways of communicating through technological means. Essentially they will be putting 'old' knowledge together in 'new' ways to create 'new' knowledge. Cyberthinkers will drive technology, not be driven by it. However, synthesis does not equal creation, so unless the cyberthinkers can develop the innovative and creative element, they will ultimately be bounded. Those who choose to take a route outside of cyberspace will be captured within the bounds of the corporate university discussed previously.

Olsen (1996) discusses the changing expectations of students with regard to teachers and teaching materials and labels the future of educational materials development as 'Edutainment'. Not only do students want to learn something, but they want to enjoy learning it. Interactive materials such as CD-ROMS and other on-line educational packages (including Encarta - the computerised encyclopaedia) have been a great success in schools. There is a danger that this leads to the production of output uniformity (perhaps with some leeway for touches of detail), rather than creative variety in a range of outputs.

Halal and Liebowitz (1996) view interactive multimedia systems as the key to the future because they suit the needs of the individual student. The student controls when to study, for how long, at what level, and testing and monitoring can be done efficiently through tracking systems. It also allows for more home schooling. Interestingly, in 1996 they predicted the following coming changes, and in 2000 the University of Derby is already implementing these through the initiatives indicated in the table below. It has only taken four years for these predictions to become practice.

Prediction by Halal & Liebowitz 1996	Practice at the University of Derby 2000
televised lectures	The telepresence teaching studio allows interactive distance learning by lecturers broadcasting their lectures to students. VESOL also allows lectures to be recorded and broadcast on the University's own TV channel.
electronically conducted instruction	The BA Business Studies is being developed as an on-line degree, with year 1 being piloted from September 2000. On-line materials, tutorials and e-mail contacts will provide the instructional input.
LANS to integrate many aspects of college life	LANS for overseas students, exchange students and professional students exist with electronic noticeboards, information sites and contact points.
Attendance at a distance	Anything available on-line is accessible from a distance, as is the telepresence teaching.
Electronic libraries (partially to save space)	UDEL is the University of Derby Electronic Library which holds essential reading material for courses electronically, available for downloading by students (all copyright cleared).
Electronic publication of journals	Many journals are web accessible, available through UDEL or systems such as EMARALD which hold full text of journal articles on-line.
Lecturing changing to coaching.	This is perhaps the slowest area to change, although professional and executive education, postgraduate study and some undergraduate activities are moving down this route.

Table 4.2: Predicted Versus Actual: A map of the changes that can occur in four years.

Diebold (1996) predicts the next revolution in computers and reviews the lessons learnt from the introduction of computers so far, drawing some interesting conclusions:

1. It is hard to change old patterns of perception.
2. Just because something is technologically possible does not mean it will happen.
3. Preconditions are often needed (such as basic education, access to resources).
4. Things usually take much longer to happen than you expect.
5. You cannot anticipate what people will do with a new technology.

Diebold views the problems now as conceptual, not technological. It is the way that people interact with technology that is holding the technology back, or pushing the advances, rather than the limits of the technology itself. This may be why the area of lecturer changing to coach is the last area of change in the predictions stated by Halal and Liebowitz above. However, economic circumstances also play a big part in these limitations.

4.3 Virtual does not mean Inclusive.

Marxists would argue that the education system maintains the middle class as the middle class, and keeps the working classes below them. Bourdieu (1986) argues for the concept of cultural capital, on the basis that individuals have value added through their situation, to which education is a contributory factor. In the future, neither of these will hold true, nor will it be a case of the 'knowledge class' mentioned in the introduction to this thesis. It will be the cyberclass that the education system will create and maintain, and its values will be very different. The reason why? In this utopian ideal, everyone should have the opportunity of getting there. Cyberthought will not be dependent on your parents, your class, or your culture. Cyberthought will be dependent on your ability to change, your resilience to stress, your ability to solve problems quickly.

The disturbing aspect of this forecast future is that the distribution of technological wealth is not equal around the world. Monaco is currently the most technologically enriched country per capita, and Congo is the least so (LaBlanc, 1998). Given the difficulties already being encountered by the third world nations in terms of human and economic sustainability, technological impoverishment simply compounds the difficulties. McDonald (1999:117) notes

> It is exciting to learn there are 100 million Internet users linked to some 30 million computers around the world. It is shocking to be told, however, that more than half of these users are in the US and that of the 100 million users, 92 million are in the developed world. That means that among the remaining 5 billion people in the world, there are 8 million people who have access to the Internet!

Jensen (cited in Useem, 1999) gives more detailed statistics, claiming that subtracting South Africa from the equation, there is only one internet use for every 5,000 people in Africa compared with one user per 38 people worldwide, and one per every 5 people in Western countries. Also if you look at web page ownership, only 0.022% of all sites on the world wide web were based in Africa last year (*ibid*).

As the pace of change of technology increases, the gap between the 'haves' and the 'have nots' increasingly widens. Nigel Negroponte (1996) raises the question as to whether or not we write off a generation of the population who were educated just before the digital technology arrived, and hence don't have the skills required for employability in the digital age. The issue, however, is wider than simply writing off a generation or two - what about half the population of the planet? As Koul (1995:23) points out:

> If distance education is to serve as a democratising force universally, if the enlightened academic is to serve as a crusader for equity in intellectual terms, if international academic exchanges have to be cleansed of the stigma of 'exploitation', distance education in the developing world needs support in basics.

Education is seen as the 'gateway into the global market' (*ibid*:17), and in a global market 'distance' is a paradox. As we move into the twenty-first century, and towards the Fourth

Dimension, 'distance education' is irrelevant for the educational agenda. It will simply not be an issue as we become global individuals and cyberthinkers. Distance education will be an out of date paradigm which is not in vogue with digital working practices. There will be no such concept as 'distance'.

Mill (1956:129) claimed that "all that has been said of the importance of individuality of character, and diversity in opinions and modes of conduct, involves .... diversity of education." He goes on to claim that where there is an education system which contrives to mould people to be the same, it establishes a 'despotism over the mind', particularly as the mould is cast by those with the predominant power in government. Essentially this is a political argument rather than one of curriculum, but the extent to which politics affects curriculum is always debateable. This said, cyberthinkers will be individuals, not clones or numbers.

4.4 The role of the Virtual University

The fundamental question is whether there is a role for university education in this development of cyberthought processes. Maclagan (1997) cites and compares Huczynski's work (1983) on domains of managerial learning with that of Kohlberg (1973) regarding processes of moral development and finds marked similarities, although the question arises as to how much of the development process is attributable to the intervention taking place, and how much would simply develop with life experiences over time. Kohlberg recognises the need for life experiences before a person can truly identify and commit to their set of moral values. While we can all role play with hypothetical situations, until we are actually in a situation, we do not know where our commitment and ethical stance will lie. Huczynski recognises that the area of affective learning could be the resultant product of general life

experiences as much as any programme of development or education. Perhaps, then, the answer lies somewhere between the two, some mix of life experiences and formal education input, or in combining the two, so that the life experiences shape the educational input, such as in action learning or experiential learning interventions. In essence, learning will take place anyway through the experiences that life throws at us. Extra benefit may be gained if this learning is formalised to help us make sense of these experiences.

Strike (1997:5) presents his view of education being for authenticity and autonomy. He defines authenticity as being 'the ability to choose and act in accordance with one's identity or nature,' and autonomy as being ' the capacity to freely and wisely choose among options unencumbered by prejudice or ignorance'. This may appear an abstract ideal but may be operationalised through the development of critical thinking skills.

In developing what Maclagan (*ibid*) refers to as 'critical capacities', Brookfield (1987:1-7) defines critical thinking as involving 'calling into question the assumptions underlying our customary, habitual ways of thinking and acting and then being ready to think and act differently on the basis of this critical questioning.' He views the activity as a process not an outcome, which is productive and positive, emotive as well as rational, and is of 'personal, occupational and social significance' (*ibid*:69).

It is questionable whether 'critical thinking' was developed in management circles as a jargon buzzword to put thinking on the management development agenda. Whether or not critical thinking exists as a concept or whether it is thinking that makes you critical is another question. In 'critical thinking' the critical aspect is the cause and the thinking the effect, while when 'thinking critically' the thinking is the cause and the critical aspect is the effect. This in itself may be a misnomer. Criticism without thinking is simply opinion, while

criticism supported by thought is substantiated argument. Therefore, it is not necessarily critical thinking that we are after, but substantiation of arguments, as a well substantiated argument deals with the counter arguments from the opposing view. This allows us to focus on the outcome rather than the input or causal effect process undertaken. Focusing on the outcome also allows us to move away from the digital influence and address the 'thinking' without the 'cyber'.

Lipman (1988) viewed critical thinking as skilful, responsible thinking, relying on criteria to facilitate good judgement. This implies moral responsibility, as in free will, and substantiation of arguments, as outlined above. Lipman's view is therefore wider in scope than Brookfield's, as it refers to responsibility and judgement, while maintaining a set of criteria. The question then arises as to what is the 'set of criteria' and to what extent are the boundaries movable. They could be societal in terms of legal frameworks, personal in terms of our individual belief frameworks, or organisational in terms of company policy, procedure and culture. This could be an antinomy as outlined in Chapter 1, or alternatively there may be no boundaries, as in Knoke's 4th dimension, when discussing borderless education, and virtual universities, or the boundaries may be constructed by the educator.

Brookfield (1987:1) maintains that critical thinking is 'crucial to creating and maintaining a healthy democracy.' For this to be true, then everyone must be capable of critical thinking or have access to the development of critical thinking skills. Boot and Hodgson (1987:6) warn us that the 'access' element can be at the expense of the 'learning' element. They propose two orientations to learning; dissemination learning which is a course based on syllabus, acquisition of facts, concepts and skills, and is measured to an externally recognised standard; and developmental learning which is based on processes and learning to learn (*ibid*:7-10).

While the second will clearly hold true for the cyberthinker, the content of the first should never be static enough to pin down, measure and set in stone.

Strike's (1997:5) view of education for authenticity and autonomy is the type of definition of education that the future university should be embracing and developing. It is not steeped in knowledge, but identity; and it is not prescriptive in how processes should be applied, just in what considerations should be taken into account.

Paul and Brindley (1996:41) draw our attention to the fact that 'technology can be easily misused for one-way learning and indoctrination.' They foresee learning becoming indoctrination, an alternative to 'genuine enquiry and debate'. They see technology becoming 'a form of drug to keep the masses blissfully preoccupied and conformist'. Essentially, it is the use of technology and education to turn the masses into 'The Borg'[3]. Joy (2000) goes so far as to question whether the future needs us.

> Robots, engineered organisms and nanobots share a dangerous amplifying factor: they can self replicate. (p.240)
>
> .... thus we have the possibility not just of weapons of mass destruction but of knowledge-enabled mass destruction, this destructiveness hugely amplified by the power of self-replication. (*ibid*:242)

If universities do not shift their positions, ideas around the machines taking over and divesting of the humans may not be just an idea in a film any more (see for example James Cameron's films 'The Terminator' and 'T2').

[3] The Borg are semi-organic lifeforms that are part machine and assimilate to a single thought pattern. They learn collectively and consider themselves as one. They always refer to themselves in the plural, stating 'we are Borg' rather than 'I am Borg'. They are characters developed in the Next Generation of Star Trek.

4.5 Changing Paradigms.

Barker (1992) localises the argument surrounding the use of education to an organisational level. He claims that the three keys to success in the 21st century for any organisation are anticipation, innovation and excellence. He claims that 'you can and should shape your own future. Because, if you don't, someone else surely will' (*ibid*:20). He challenges us to change our paradigms - the boundaries we put around our thoughts, behaviours and actions. Our paradigms develop with our knowledge and experience of life. In Knoke's fourth dimension we are looking at a boundaryless society which challenges the foundations of the paradigms we have developed in the twentieth century. Indeed, Willis (1996) even redefines the acronyms BC and AD, such that they indicate 'Before Computers' and 'After Disks'.

Miller (1996:40) offers one perspective on how technology has been and can continue to be used in higher education:

> In the traditional paradigm ...technology serves two basic purposes. First, it extends the reach of the institution, increasing student access to the instructional process. Second, it offers opportunities to improve the effective presentation of knowledge to students.

He argues that as education moves from a teaching to a facilitating role, technology's role changes. While it continues to increase access, the nature of that access changes with the use of electronic media and the internet. This moves education to a 'media-rich learning environment in which different technologies are brought to bear on the goals of the curriculum itself' (*ibid*:41), in a way that is integrated, seamless and user-driven. While this may be forecast as the near future for open and distance learning, Miller predicts it is the long-term future of higher education generally.

In academia this is quite some challenge. To move away from the traditional lecture and tutorial model towards a digital, virtual delivery does indeed require a paradigm shift in

pedagogy and lifestyle. The new andragogy requires a new mode of delivery, a massive development of new learning materials by a profession which is in essence 'behind the game' as it is school children who have the more widespread experience and opportunity for digital learning, not academics. It is also, possibly, too late. O'Shea foresees a huge change for academics, claiming it can take up to 200 hours to design an hour-long learning experience on the web (MacLeod, 2000b). The British Government is only now looking at the development of an 'e-university' (Goddard, 2000). Mexico and Nairobi already have virtual universities, as have Harvard, the University of Pheonix and other American institutions.

The implications for universities now are tremendous and not, at first sight, positive. Marcus (2000) raises the concern that on-line teaching costs are high and rewards are low. On-line requires more time and money if quality is to be maintained, and the student population is non-traditional. Their need for education may be tempered with their geography, family priorities, or other social factors. The anti - on-line campaigners claim the development is profit driven rather than educationally driven, but students on internet courses had marks better than or as good as class attendees (Fine, 2000).

4.6 Current Developments in Virtual Universities.

The African Virtual University (AVU) is an example whose results would contradict the 'anti's' claims. The AVU 'uses modern information and communication technologies to give the countries of sub-Saharan Africa direct access to some of the highest quality academic faculty and learning resources throughout the world' (AVU website, 2000). Participants are able to receive the instructional material via the Inter*net al*though access to the information is problematic (Okuni, 2000). In Subsahara Africa 43% of adults are illiterate and millions of children do not attend school (*ibid*).

The AVU was established with funding from the World Bank and the lessons are taught by European and American faculty which are beamed to 22 universities in Africa. The achievement results have been remarkable with pass rates in subjects previously averaging 25-40% attaining 70% through the AVU (Light, 1999). What is more, Turner (1999) reports that the AVU is now self-financing. The World Bank and other bilateral agencies provided the computer equipment and expenses for the start-up, but the AVU is now charging fees for its course and has become entirely self-sustaining in some countries. This could be interpreted from a political perspective as western elitism extending its reach into less developed countries. The conundrum of whether it is politics or education that drives the virtual university is difficult to resolve.

The Monterrey Institute of Technology and Higher Education is another example of the virtual university in practice. It was founded in 1943 by a group of Mexican businessmen and is expanding its educational services throughout Latin America. The Institute's virtual university receives support from prestigious faculty members from North American universities such as Stanford, MIT, Purdue and San Francisco State University, and these professors present live seminars and lectures to both undergraduate and postgraduate students (Monterrey Institute Virtual University website, 2000). Again, it is only the medium that has changed here, not the message, raising questions as to the political agenda of delivery of US education in South America.

In addition to delivering accredited courses, the virtual university has a business channel which is broadcast to all of Latin America and delivers skills and competency based education and training for small, medium and large organisations directly to the workplace. At present they have around 980 in-company classrooms (*ibid*).

It is perhaps most difficult for the developed Western countries to adapt to the idea of a virtual university. They have built up the traditions of higher education; increasing percentages of their populations have experienced higher education in some form; and they employ the majority of university academics. The above examples show that Latin America and Africa are embracing the virtual models and making them work for them, even if they are currently sourced from the USA. It is here that any further expansion of higher education will occur, as it is the developing world which is the largest potential growth market for education at all levels. The extent to which universities will contextualise their educational curriculum before exporting it may be an issue for the future as the market expands and more choice is available to buyers. Those universities that embrace these changes, such as Derby, will adapt and change to meet the future needs. Those that do not are in danger of perishing or becoming incredibly specialised again, as all they will cater for are the elite students who can afford full-time attendance in their locality.

In terms of modelling the virtual university, the emergent model is clearly definable, raising issues and concerns which can be labelled 'by-products', and developing a student as a cyberthinker.

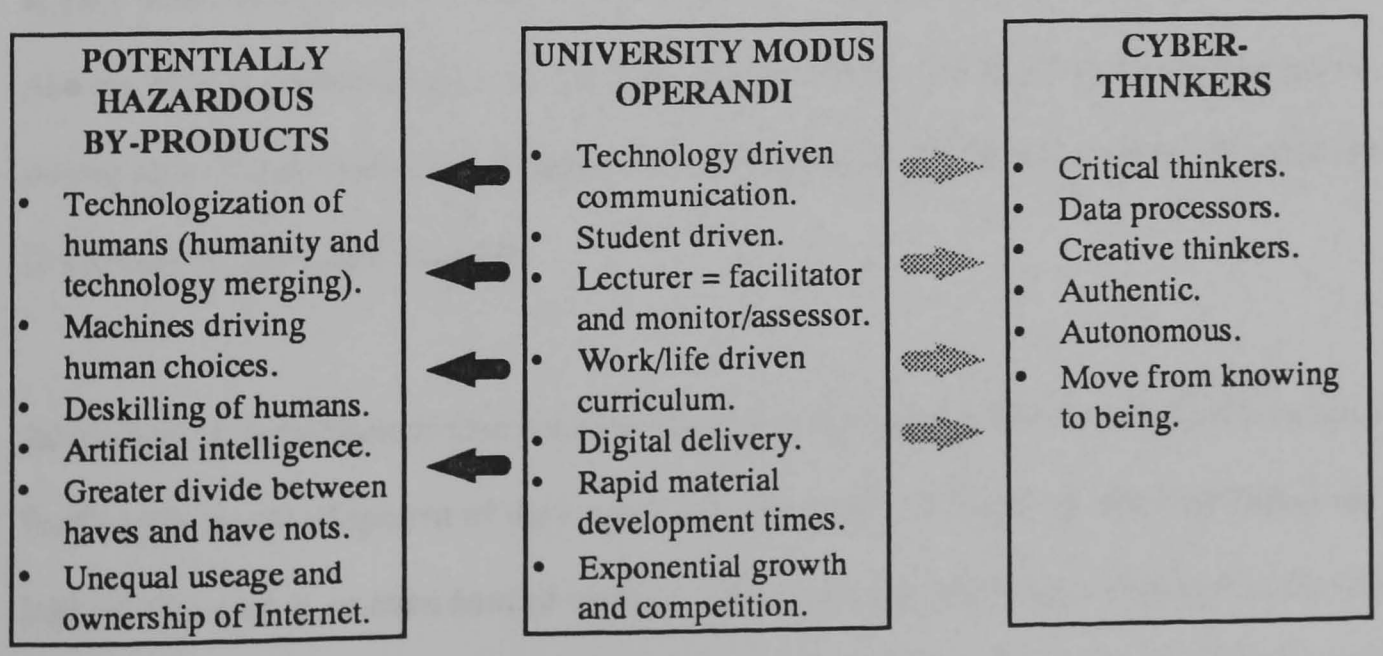

Figure 4.1: **The emergent model of the 'virtual' university.**

The emergent model is one of changing university *modus operandi*, with the output being 'cyberthinkers' from the student viewpoint, and a range of 'potentially hazardous' by-products from a more holistic view. A more preferable model changes little in terms of the student output, but the tone of the *modus operandi* differs and the by-products are wholly more favourable.

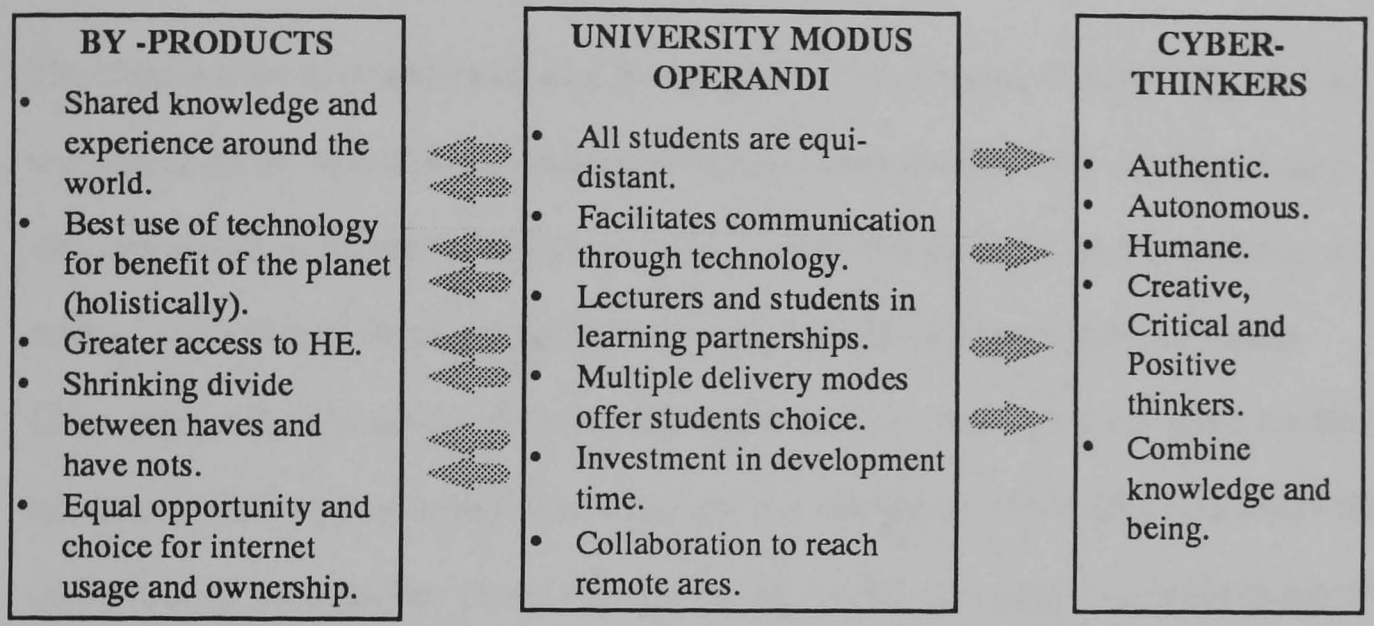

Figure 4.2: **A future model of the 'virtual' university.**

To move from the emergent to the future model would not be too difficult a task. There are already some universities working in collaboration with each other, such as those in the African Virtual University (see for example Turner, 1999), and others are in the process of setting up a Global University Alliance, to be launched shortly in Hong Kong, of which the University of Derby is a member.

Investment in development time is on the Government's agenda with the £100million extra funding for the development of the e-university (Goddard, 2000a & b), although this is not being distributed in an even handed manner. Otherwise universities are expected to develop these initiatives using existing funding, or additional private funding, while at the same time attempting to make 1-2% efficiency gains per annum.

Technology needs to be embraced in universities and used to increase student choice. Some students prefer to learn interactively, others prefer to attend classes. The University of Derby is piloting modules this year with multiple modes of delivery and will be monitoring and evaluating the student experience and their results according to their chosen mode of completion. It does not have to be an all or nothing scenario as yet.

The biggest issue to be addressed on a global scale is that of access to technology, and this was indeed on the agenda at the Okanawa G8 summit held in July 2000, although it may seem premature as Useem (2000) points out that while you may only need a computer, a modem and a phone line to get started, even in the building where the African Virtual University presidents, rectors and vice-chancellors gather to meet, there are only a handful of electrical sockets to plug laptop computers into, and international telephone connection after 6pm is simply not possible. Okuni (2000) confirms that the basics are lacking in much of the developing world, estimating that the technical requirements needed for global communication are not available to 80% of the world's population.

The virtual university has arrived in its infancy and should continue to grow and develop. The extent to which this will be on an exclusive rather than inclusive basis will depend largely on finances, as will the quality of the delivery. The move towards virtual learning will result in massive changes to the role of academics and the student experience. These will be considered later when considering the implications of the future university on its members.

Chapter 5 - THE 'GLOBAL' UNIVERSITY

It is impossible to find a source which discusses the future, the move from the 20th to the 21st century, or indeed changes taking place at present, without it referring at some point to the concept of globalisation. The world wide web has essentially made the world a smaller place by removing national borders. You can buy and sell shares in any stock exchange in the world from your living room; you can study at Harvard without ever going to Boston; and you can buy and sell information and commodities without having to go through customs.

With regard to education, globalisation has already begun. We see universities having 'franchise' arrangements with partners in foreign countries; there are staff and student exchange schemes between universities; there are international research collaborations; and there is the growth of the on-line virtual learning environment. The development and implications of the latter have been discussed previously and therefore will only be considered in this chapter with regard to their impact on the globalisation process.

Truett Anderson (1998:37) mapped the changing nature of global change and summarised the 20th century as 'increasing globalisation and cultural pluralism influenced by the idea of socially constructed reality'. He refers to the 'reaction against the doctrine of inevitable progress', implying conflict and resistance to the progression of global society (*ibid*). This resistance can be seen in Hutchinson's (1998) study of young people's hopes and fears for the future, where he found they 'anticipate predominantly negative global futures'. The teenagers could describe concrete images of war and violence but comparatively weak images of peace. The extent to which media and film impact or shape these images is unknown, but it is concerning that when considering a 'global future' the youngsters used negative descriptors rather than positive. They also indicated that technology would be the means of

meeting future challenges, which ties in with some of the ideas mentioned in the previous chapter.

This chapter examines the concept of globalisation with regard to higher education. It questions its development, its aims and the conflicts surrounding the issue, mapping an emergent international model against a more truly global model.

5.1 The Global Challenge for Higher Education.

Kearney (2000:9) outlines what she sees as the global challenges facing higher education:

1. Continued and increased demand for access - both nationally and internationally.
2. The impact of massified enrolments - on the university administration and academia.
3. The necessity for diversity in post-secondary education and training - meeting the corporate needs and widening the access to higher education. (This may also be seen in the corporate university.)
4. Trend towards dual modes of public and private funding for higher education - diminishing reliance on public funds and increasing emphasis of students and corporations. (Again, linking back to the corporate university.)
5. The potential of technology for enhanced instruction - the virtual university element.
6. The impact of internationalisation in terms of the mobility of people and expertise - wider distribution of knowledge.

The basis of these six challenges could be applied to a national context as much as an international context, but Kearney chose to position her views in the global framework. She argues that countries need to remodel their provisions of education in order to meet the

technology driven, knowledge intensive society, and that the current challenge is to adapt to the social, economic and cultural aspects of globalisation.

Her work falls into the category that would have been criticised by Sardar (1996:22) for falling into the white man's world view where 'the majority of people in the world have no future'. Because her tenets hold true nationally as well as internationally, they are not truly global but an extension of western views into a westernised future. There is the assumption that technology will make things better; perhaps so, but you need to have the technology in order for this to be true. There is the presumption that educational provisions will need to be remodelled; in order to be remodelled there needs to be a model in the first instance. Therefore, is this a case of those that have a model engaging in remodelling to conquer those that do not have a model. This could be regarded as imperialisation rather than globalisation.

The need for private funding is raised. Goddard (2000) found that it is international students' fees that are keeping UK universities in business. They make a loss on their publicly funded home students and rely on the foreign students' fees to make ends meet. This is an area in which Tysome (2000a:1) finds Britain inadequate, claiming UK universities are 'unprofessional, complacent and naive' with regard to their foreign recruitment, and he warns that competition is becoming fiercer.

Arguably it is not the globalisation of higher education that forms the majority of the rhetoric around the subject, but the spread of western education or imperialisation. Clark (1996:423) identifies two types of growth:

> substantive growth is knowledge led and generated largely by research, while reactive growth is student demand led and generated by student enrolment.

The use of the term globalisation regarding the expansion of higher education is a reactive growth strategy. There is the opportunity for established, western universities to influence the emerging universities in the developing world (even the African Virtual University has an American and European faculty delivering the education), to exploit them with regard to funding, either through costly franchise arrangements or through them sending students to Europe/USA to study, and to influence the curriculum so that it presents capitalist rhetoric and western cultural ideas.

Sentamu (2000:51) argues that we should be valuing cultural diversity in education, presenting a relatively liberal view. 'Education must challenge our complacency, our prejudices and our misconceptions.' To him globalisation is an opportunity for further development and exchange of ideas, rather than the one way opportunistic approach currently being practised. This view also challenges the issues raised in the development of the corporate university concept.

Scott (1998) goes so far as to declare the internationalisation of universities a myth. He views the massification of higher education creating national identity, reproducing national elites, and fulfilling a social function. While there may be some international characteristics of higher education, internationalisation itself is not one of them, but is held up as a myth to deny the submersion in domestic affairs.

5.2 Globalisation or Internationalisation?

The term 'globalisation' itself would appear to have different interpretations in different situations. Is global the same as international? While everything international would be included in global, the antithesis is not necessarily so. Global has an all inclusive sense to it;

a boundary or border or edge is not possible on a globe. International, on the other hand, simply refers to relations between two or more countries, and so the European Union, for example, is international but not global in its definition.

Urry (1998) discusses the meaning of global from a number of angles. Firstly he claims that concept of 'global' takes us beyond the control of the nation states. A global operation is outside of any national jurisdiction and operates across different borders in many countries. Secondly he questions whether 'global' is merely an ideology regarding the spreading of worldwide capitalism. This reinforces the points made earlier about western dominance of the 'global' concept. Third is the use of globalisation as a kind of strategy employed by transnational corporations who lack commitment to any one particular territory and benefit from transferring operations, business and money around the world. This is almost using the global concept as a form of self-interest and avoidance; avoiding taxation, avoiding any form of domestic control, avoiding too much dependence on any one country. There is also the idea of globalisation with regard to political mobilisation: for example, the use of the media and environmental groups acting on international fronts to bring changes such as Greenpeace and the sinking of the Brent Spar oil platform.

Finally, there is globalisation with regard to mass competition. The change in funding crisis, the need for more 'foreign' students, the massification of higher education and the demand for education in countries where supply is short (essentially the developing countries) has led to higher education becoming increasingly competitive.

The market for 'academics' is also becoming increasingly global. Britain currently underpays its academics and is suffering a 'brain drain' (Baker, 2000). This situation is exacerbated by the likes of Sir Michael Bichard (permanent secretary at the Department for

Education and Employment) who angered the academic community claiming 'universities are well funded, lecturers well-paid and problems partly of institutions' own making' (Thomson, 2000c:1). Given this lack of recognition and poor funding for research, many academics are moving overseas to fill gaps in developing countries as well as lucrative positions in Europe and America (Baker, 2000). These opportunities are also likely to increase in the future as Kigotho (2000) identifies a crisis looming in East Africa as there are no successors evident or being developed to take over from their ageing professors.

Apart from the area of mass competition, higher education does not really fit within Urry's taxonomy of globalisation. Elliott (1998) discards the globalisation label and discusses British Higher Education from the perspective of 'Internationalising'. He defines internationalisation as 'a systematic, sustained effort by government to make higher education institutions more responsive to the challenges of the 'globalisation' of the economy and society' (*ibid*:32). Internationalisation is therefore a subset of the globalisation process. If we take globalisation to be the stimulus, internationalisation can be seen to be the response.

5.3 The Global Imperative.

Clearly there are financial benefits for western universities having international operations otherwise they would be unlikely to continue. The benefits from the view of the 'foreigners' are perhaps a little less clear cut. While Britain is aiming to capture 25% of the international student recruitment by 2005, it is currently attracting 17% and the market share is falling (THES, 2000a). The British Council claims that the UK has been trading on its reputation and needs to provide an overall better experience for overseas students (*ibid*). Tysome (2000a:1) quotes the same report claiming 'competition is becoming far more intensive and customers more demanding, more discriminating and less wedded to traditional patterns of

buying'. The colonial ties will not stand the test of time and the prestige of 'British university tradition' will diminish unless universities change in line with student expectations.

There is also a need for the global expansion of Higher Education to ensure that the developing world does not get excluded from virtual and other developments. If this issue is neglected, we will have a planet where the developed world is educated, democratised and virtually intelligent, while the 'underdeveloped world' will be uneducated, lacking in basic physiological needs with mass starvation and exploitation. Essentially this will be an international division of labour.

Sadlak (1998:103) quotes John Daniel, Vice-Chancellor of the Open University:

> merely to keep student participation rates constant in the developing world, one sizeable new university has to open every week to meet the demands of the young and growing population.

The demographics themselves are interesting as the developed world has an ageing population with a falling birth rate, and the developing world is where the population is still expanding. If we do not endeavour to globalise education we will end up with the planet being dominated by a minority section which, if we follow history's lessons, will be likely to lead to war and mass destruction. Increasing polarisation of inequalities could then be a pressure to increase the globalisation process.

Sadlak (1998) looks at holistic factors influencing globalisation which in turn impact on the globalisation of education. Firstly he points to increasing democratisation. With the collapse of totalitarian regimes there is a spread in civil society (for example the break down of apartheid in South Africa). The greater the spread of democracy, the greater the potential for

education, as education contributes to a healthy state of democracy. Barnett (1990:18) traced the history of universities and their tension with their host societies finding they were essentially 'developed as self-governing communities of scholars challenging the political forces at that time'. The development of conflicting ideas and the concept of academic freedom promote democracy and choice. Students, historically more than presently, represent unrest in society through disenchantment and disillusionment with the adult world, not wanting to conform to society and believing that things could be different (Morris, 1969).

Sadlak's second factor is that of regionalisation. As nation states within regions are forming alliances the collaboration between educational institutions in the region should also increase. Examples of this include the European Union where students can study in any country in Europe and pay 'home' student fees rather than 'foreign' student fees. A similar union is under development in the Southern African hemisphere with the establishment of COMESA, although it is still in its early days.

Third is the question of polarisation of inequalities which was discussed earlier, and finally there is the trend towards increasing marginalisation and fragmentation leading to ethnic, tribal and religious based social and cultural exclusion. As the nation state becomes less of an identity, there are increasing numbers of smaller, similar interest groups fragmenting themselves within society. These groups can then feel marginalised and threatened leading to their destruction, for example the apparent mass suicides at Waco and more recently in Nigeria. Increasing globalisation can only occur if there is an extension of tolerance to cultures, religions and tribal beliefs that go beyond the tradition of any single nation state. Rather than trying to increase the spread of capitalism and other western ideals, globalisation should be about embracing ideas from elsewhere and learning from each other. The

assumption that 'reality...is constructed in the image of the white man' (Sardar, 1996:222) needs to be challenged and broken down if globalisation is truly to happen.

There is also a human element to the need for globalisation. Bellamy (2000) published a UNICEF report into the state of the world's children and found that over the last 20 years, the world economy has increased exponentially, and at the same time the number of people living in what is classified as poverty grew to one in five. Every day 30,000 children under five die of mainly preventable causes.

Gibbons (1998) looks at higher education from the viewpoint of production of knowledge. With regard to globalisation he observes that exchange schemes have very low take-up rates and only a maximum of 10% of students study abroad, which will decrease further as home countries' economies develop and they establish more home provision themselves. He sees expansion being supply side driven in terms of the massification of higher education, and demand side driven from the desire for specialist knowledge. The combination of these forms the idea he develops of 'distributed knowledge production'. There are five characteristics to distributed knowledge production as outlined by Gibbons:

1. There are an increasing number of places where recognisably competent research is being carried out - that is the global research base will spread its reach and include countries previously isolated from the research elite forums.
2. These sites interact with each other and thereby continually broaden the base of effective interaction - collaboration and exchange of information between researching institutes will increase.

3. The dynamics of distributed knowledge production lie in the flows of knowledge and in the shifting patterns of connectivity among these flows - the flows of communication and information will become increasingly important.
4. The number of interconnections is accelerating, so far apparently unchanelled by existing institutional structures - hence the interconnections could include corporate universities, virtual universities, colleges, specialist training institutions and so forth rather than being limited to traditional, aged universities.
5. Distributed knowledge production exhibits heterogeneous, rather than homogeneous growth - the growth pattern will not be steady, forecastable or predictable.

Tabberer (1998) agrees with Gibbons regarding the growth of research and knowledge production in international communities, but he focuses on a shorter time period and takes a comparative standpoint. Tabberer points out that education is not exempt from the communications revolution, the state of global economies and the mobility of capital, and as such needs to look at the wider world:

> Getting to know more about global education may help us understand the inter-relationships which underpin relative high and low performance. (*ibid*:92)

He takes his analysis to a more specific level (rather than a holistic overview) and identifies the need to examine various elements on a comparative basis including differentiation of materials in the classroom; the extent of central control of the curriculum; methods of pupil selection; the use and impact of core textbooks; influence of parents and parental pressure to succeed in particular; and wider cultural values and their impact on the institutions.

It is not just the needs of the potential students, however, that set the global imperative. Useem (1999) refers to the isolation of academics in Africa when considering the African Virtual University. African academics have limited funds for new books and journals, and

there are no good libraries available. This makes it difficult for academics in such countries to maintain their knowledge in their discipline and further exacerbates a brain drain in such areas of the world. Useem proposes technology as a possible solution and indeed it may offer some help, but it is the process of globalisation that will bring the technology to them.

The Report to UNESCO of the International Commission on Education for the Twenty-First Century stresses the extensive role of education in society being from establishing social cohesion to developing democratic participation (Delors, 1996:ch2). Talib (1998) progresses this argument but highlights the dangers of education policy being misguided, making the point that education can be used oppressively to model selectively the world of the dominant and strong. Dr Babaseheb Ambedkar, (cited in Valeskar, 1998:210) focuses more on the importance of HE in the political struggle for liberation:

> ...The problem of the lower order is to remove from them that inferiority complex which has stunted their growth and made them slaves to others, to create in them the consciousness of the significance of their lives for themselves and for the country, of which they have been cruelly robbed by the existing social order. Nothing can achieve this except the spread of higher education.

Clearly education has a role in the maintenance of democracy, participation in which, Delors (1996) argues, is 'a matter of good citizenship'.

Education could also have a role redressing imbalance in social class in society and this is a key argument in the drive for increasing numbers entering HE. Taking Bourdieu's notion of cultural capital (1986) the amount of capital that is accumulated by the institutionalised state can be directly appreciated in value by education, and indirectly the embodied and objectified states may also increase their capital worth.

Form of Cultural Capital:	Sourced from:
Institutionalised State	Gained through formal educational processes including schooling.
Objectified State	Gained through availability of intellectual stimulus including books in the household, theatre and travel.
Embodied State	Gained through the disposition of mind and body.

Table 5.1: **Bourdieu's Forms of Cultural Capital.** (Adapted from Bourdieu, 1986).

Bourdieu further claimed that cultural capital is a privilege of the middle classes and as such the concept becomes a self-fulfilling prophecy; the more you have, the more you create. Halsey *et al* (1997:15) supported this by setting as an example the choice of educational establishment being made available to parents under the previous Conservative Government. They argued that the 'equality of opportunity' notion espoused by the Government was outweighed by the middle-class calls for 'choice' over the education of their children. This could be supported by the fact that universities are 'still dominated by those from professional and managerial backgrounds' (*ibid*:5). Delors (1996:67) maintains that 'education policy must be sufficiently diversified and must be so designed as not to become another contributory cause of social exclusion.'

Levin and Kelley (1994:250) incite us to be wary of seeing education as the great healer of all ills;

> The fact of the matter is that education is just one fact, albeit an important one, in an overall melange of conditions that determine productivity and economic competitiveness, as well as the levels of crime, public assistance, political participation, health and so on. Education has the potential for powerful impacts in each of these areas if the proper supportive conditions and inputs are present.

While education has a role in redressing societal imbalances, it cannot redress these imbalances alone.

Another agenda item of this Government for HE should be the development of moral well-being and citizenship. Durkheim (1961:45) argues that through discipline 'the condition of happiness and moral health' is developed and this 'capacity for self-control is itself one of the chief powers that education should develop'. Usher, Bryant and Johnston (1997:28) make the point that education is for citizenship, being concerned with 'the knowledge, skills, attitudes and values necessary for citizens to participate meaningfully in society'. This is broadly encompassed in the Delors/UNESCO (1996:85-97) ideal of the 'four pillars of education' being 'learning to know, learning to do, learning to live together and learning to be.'

At a macro level the agenda is clear; it is about developing society and establishing moral understanding. At a micro level, the agenda is more opaque. Delors (1996) makes the point that the socialisation of individuals must not conflict with personal development.

5.4 Measuring Success in Globalisation

A study comparing a variety of private education companies in developing countries, many of which were not-for-profit foundations, from kindergartens to universities was carried out by Tooley (1999). He identified a range of factors which contributed to success:

1. Efficiency considerations - keeping costs low in terms of space, technology costs and teacher time such that buildings, classrooms and technology were constantly in use, perhaps by the kindergarten in the morning, university students in the afternoon and adult literacy in the evening.
2. Innovation in both process and product - this means developing curriculum to meet the specific needs of the students, changing pedagogy as needs require and using technology innovatively to teach content and IT process concurrently.

3. Brand name - the importance of branding is perhaps disappointing as it is a label rather than content which holds the weight. This may change with time as greater choice becomes available and students become more educated in identifying the needs.
4. Certification - as with branding, this has no more relevance in the developing world than it does elsewhere. Students like to get certificates to prove they have reached a certain level.
5. Integration and expansion - horizontal in terms of merging with other institutions at the same level, vertical in terms of keeping students from kindergarten to PhD, and lateral in terms of recruitment agencies for job seekers at the end of their studies, TV, radio and publishing.
6. Raising capital - successful institutions raise capital through loans.
7. Franchising - delivering courses that are franchised from other institutions, perhaps for branding and certification purposes.
8. Quality control - this is a key concern such that graduates with a degree from an African university are deemed the same quality as from an American or European university.
9. Management of other financial elements - such as raising donations, whether to be for profit or not for profit, whether to lease or own property, and managing the risk of unpaid tuition fees.

The surprising element to Tooley's analysis is that success does not seem to depend on local factors in any way. This is perhaps because he was looking at essentially western institutions which have been placed in developing countries rather than institutions which have developed through the needs and scholarly activities of the local communities. Hence Tooley's work is essentially a guide to being successful at operating western education in other non-westernised countries.

Wagner (1982:30) looked at the challenge of change for higher education and recommended that:

> any new national arrangements for the governance of higher education should allow for an enhanced role for local communities in all institutions in their locality .... including representatives of governing body and strategic planning groups.

While Wagner may have been commenting on a British governance model, there is no reason why the same should not be applied globally, if not more so. The needs on any one locality within a country are likely to be less diverse than those between countries.

Sizer (1982) takes a more holistic view of measuring performance and suggests a range of performance indicators for higher education which have a clear focus on what they are trying to measure, definition of the conceptual content, and a descriptor of what the information tells you.

FOCUS OF MEASURE	CONCEPTUAL CONTENT	TELLS
Availability	Amount and type of course, research facility, central service provision	What can be obtained
Awareness	Potential user population know of existence; range of courses and facilities; entry criteria	Who knows about what is available
Accessibility	Indicates if appropriate group can obtain services	Ease of reaching and using facility
Extensiveness	Quantity supplied against capacity available and demand	'How much' but not 'how well'
Appropriateness	Validity of content, quantity and type of service offered	Is quantity/quality of facility offered what is required?
Efficiency	Resource inputs against outputs	How much resource was used (costs)
Effectiveness	Accomplishments against objectives/intentions - qualitative and quantitative	Characteristics, duration, content, effect, variances from budget, etc
Outcomes/Benefits	Social and economic benefits	Monetary and non-monetary effects
Acceptability	Match of outcomes with user/ participant preferences	User satisfaction, student satisfaction, client satisfaction

Table 5.2: Properties of performance indicators in higher education.
Source: Adapted from Sizer (1982:40-41).

While, again, these were developed for a British model of higher education, because they are related to the student's, client's and user's needs and satisfaction, they could apply in any context and are therefore useful indicators for measuring the success of universities' global extensions. Indeed it is almost the degree of localisation at the delivery point that establishes the degree of globalisation at the source.

Blass (1999) suggests a quality model for higher education that is centred solely around the needs of individuals concerned. It looks at four stakeholder perspectives - the student, the academic, the employer and wider society, and identifies each of their primary concerns before bringing them all together in a concatenation giving three primary measures of quality; preparatory, applicatory and mastery.

Customer	Perspective	Quality Measure
Students	Inputs	PREPARATORY MEASURE - the extent to which the input prepares the individual for the purpose intended.
Employers	Outputs	APPLICATORY MEASURE - the extent to which the application of the skill/knowledge improves the individual's performance/output.
Government	Outcomes	MASTERY MEASURE - the extent to which the individual can continually develop within society for the expansion of gross national human capital and global competitiveness.
Academics	Process	MASTERY MEASURE - the extent to which the individual has developed the cognitive processes at the level intended.

Table 5.3: **A Concatenation of Quality in HE. (Blass, 1999)**

Each of the quality measures is defined in terms of the intended purpose. This allows it to be applied to any course at any university using any delivery mode, as the model is initially dependent on the intentions of the student.

5.5 Modelling the Global University

The emergent model of the global university is questionably international rather than global. It is one of catering for 'foreign' students and recruiting them at overseas university recruitment fairs. Alternatively, there are franchise arrangements to allow institutions in the 'foreign' country to deliver programmes that have been written and accredited in the 'home' country. The University of Derby has an arrangement such as this with Intercollege in Israel. This involves lecturers either going over to Israel for a number of weeks at a time or delivering to Israel from Derby via an interactive distance learning facility (IDL). This delivers a 2-way broadcast of teaching sessions allowing the class to ask questions, respond to multiple choice questions, undertake tasks and receive feedback on them, and so forth. While Derby's Israel experience has worked well for all parties concerned, not all overseas franchises have been so successful. The Southampton Institute, for example, had to shut down a number of their franchise operations.

There are alliances developing between universities to target the global market. The 'Global University Alliance' is about to be launched in Hong Kong which will form a linkage between institution in Europe, Australia, Asia and Canada. Universitas 21 is a global alliance amongst the top research institutions, and other groupings are no doubt forming.

The curriculum is becoming more international. It is no longer possible to examine content in most subjects in isolation from global influences. Hence the internationalisation of the curriculum is inevitable in any discipline with an 'applied' element.

Paradoxically, while there are increasing numbers of alliances, partnerships and franchises, those not involved in such arrangements are becoming more isolated. The cost of not being 'in' is not yet known, but failure to breach the global market now could result in institutions becoming smaller, isolated deliverers of specialised fields to local students only.

Finally, transparency is increasing and higher education is being internationally scrutinised. Both from specific targeted comparative studies and from researching other institutions over the web and through their public returns, it is becoming easy to make comparisons and 'judgements' on institutions' relative performance. While this may be unwise because you cannot be sure to compare like with like, it is inevitable as making comparisons help students make choices.

An alternative model which could be developed is one which requires a certain amount of virtual availability. One of the key resources that is harnessing globalisation rather than internationalisation is information technology. The use of technology could make every student in the world equi-distant from the university source. Virtual delivery is the same wherever you are and does not differ as mileage increases.

If all courses are delivered to international student cohorts then a truly international curriculum will be developed to examine multiple contexts and their effects on the curriculum. Sardar (1996:222) claims we assume that 'the only world view, and the associated metaphysics and values, worthy of attention is the western civilisation's world view' and that 'there is only one science of nature that is objective, positivist and universal: western science'. This reinforces the issue of the political agenda driving the curriculum which was raised with regard to the virtual university, and the corporatisation of university education raised with regard to the corporate university. The key to changing these

assumptions is to develop a truly global curriculum that includes different ways of doing things. As Puttnam (2000) warns us when regarding the future of education, 'the way we have always done things is not necessarily the best starting point'.

The truly global university will work in collaboration, both with local delivery centres (if they exist, or virtual providers) and with other universities with regard to the production of new knowledge. It will take a non-isolationist stance and be inclusive of ideas and sources not traditionally recognised as valid or reliable, and will endeavour to sustain local development as well as global development rather than executing a take-over.

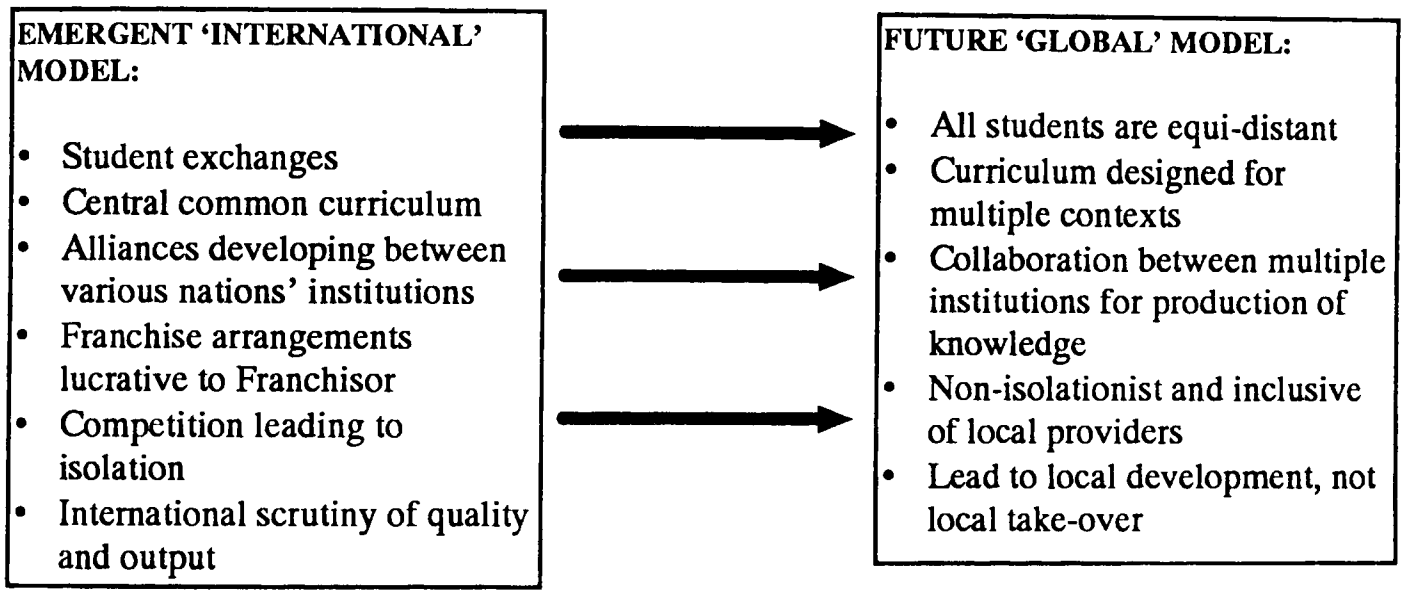

Figure 5.1: **The emergent 'international' model and the future 'global' model for the university.**

To move from international to global requires yet another paradigm shift, but this time specifically for the policy makers and Vice-Chancellors of the universities. To shift an institution to a global mindset will require leadership and direction, as it will result in hard work and change for the staff developing and delivering the teaching materials. Again, it will initially require investment rather than generate profit, but the longer term benefits both for the university and society would appear to be great.

Chapter 6 - THE 'FUTURE' ACADEMIC

The corporate, global and virtual university will be very different places to study compared to the traditional university model in Britain. Consequently the student experience will be different as will the role of the academic. If all students are equi-distant (as in the global university), use multiple and flexible delivery modes according to their needs (as in the virtual university), and are looking to develop their employability through being creative, innovative and able to put theory into practice (as in the corporate university), they will all essentially fall into what is traditionally encapsulated in the terms 'open, distant and flexible' learning. The global element equates to the distance, or the lack of it, the virtual element equates to the flexibility, and the corporate element drives us to be more or less 'applied' according to the corporate needs. This will require different teaching skills, new materials development and a whole new role for academics.

Holmberg (1989, cited in Jarvis, 1995) sets out seven postulates to distance education which, perhaps except the second one in particular, could all be equally applicable to the future university. Although writing about distance education, nowhere in Holmberg's postulates do spatial or time factors appear. This distinguishes his work on distance education from the majority, or perhaps makes his work misplaced amongst the open education rhetoric.

Holmberg on Distance Education
1. There should be the creation of a personal relationship between the teaching and learning parties.
2. There needs to be well developed self-instructional material.
3. There should be intellectual pleasure in the exercise.
4. The atmosphere, language and conventions should foster friendly conversation.
5. The message received by the learner should be conversational in tone, easily understood and remembered.
6. A conversational approach should always be used in distance education.
7. Planning and guiding are necessary for organised study.

Table 6.1: Holmberg on Distance Education (adapted from Jarvis, 1995:158).

While Holmberg presented his work as being centred on distance education, his principles appear very general. Holmberg's postulates are about the tone of the educational intervention and the attitude or culture within which it is delivered or received. This sets the agenda for academic development, allowing for the changing contexts of the teaching and learning parties, and the 'conversation' taking many different forms. For example, the personal relationship may be established through e-mails, telephone calls and even letters (indeed the impact of the form of communication on the actual communication process can be an additional learning point for the parties involved). The self-instructional material could be a CD-ROM or web based rather than paper based workbooks. They can have links to other useful and interesting web pages and allow the student to discover resources beyond the original links provided. It allows good use of a 'library' without physically having to attend.

There should be intellectual pleasure in all learning. Much of the pleasure comes from discovery, from mental stimulation and interesting interaction with fellow students. This can take place on electronic bulletin boards, conversational sites and group e-mail networks. While there may be a loss of spontaneity because a typed response is slower than a verbal one even if everyone is logged on at the same time, this time delay can add quality to the 'conversation' as there is additional thinking time built in before response. Alternatively, it can result in the loss of interpersonal skills and interaction as the spontaneous, social elements are lost.

A new language will develop with new syntax, new vocabulary and very different forms of grammar. The expression and articulation of the conversation will be different when written rather than spoken. A whole new internet communication may develop based on acronyms,

symbols and shortcuts. A marginal side effect may be that any latent prejudice that anyone has will be more covert as they will not be able to make judgements on each other's gender, race, size, hair colour and other physical attributes.

Control mechanisms with regard to planning and guiding students are also possible. On-line assessments can have completion dates after which no work can be submitted. Interactive on-line assessments mean that a range of assessment tools become available to tutors rather than the traditional class room based forms. Also tutors can monitor when students are logging in to certain areas and how long they spend in each area - although if they get wise to this they simply log on and leave their computers! This form of assessment removes any tutor bias in marking, depersonalises the assessment process and changes the tutor-student relationship.

There are various ways in which Holmberg's postulates can be operationalised digitally. The above are simple examples drawn from familiarity with current technology, without the foresight of what the future will add.

The greatest challenge for educationalists will be to embrace the changing role of technology, using advances to enhance learning strategies rather than disable them, while ensuring that purpose does not lose out to process. This requires a paradigm shift to new modes of delivery and communication, a 'redesign' of the student concept, and a new model of academic development. The greatest challenge for 'the university' will be to support staff through this development and change its institutional operations.

6.1 Learning from the IDL experience

One new form of delivery employed by the University of Derby to meet the requirements of its Israeli franchise is Interactive Distance Learning. Essentially lecturers deliver material to students live through television media. They can deliver to up to six different locations simultaneously, and receive a video generated return picture of the class so that the lecturer and students can each see each other and return dialogue. The students have key pads through which they register votes, and answer multiple choice questions. The task of delivering through IDL was approached in a largely naive manner by most of the lecturers based in the UK - after all, how different could it be to delivering material in a lecture theatre? The answer, unfortunately was 'very' and casualties quickly appeared.

Firstly, when lecturing to students live movement can occur in the form of pacing, pointing to things around the room; and throwing paper balls at students who look like they're dropping off. When delivering through television (technically called the 'telepresence teaching centre' or TPTC for short) generally the technology limits the lecturer to being stationary. It is difficult to move from your chair because of wiring to microphones and ear-pieces, and there is limited scope for rotating the camera to show students the broadcasting room. Hence the student's attention is completely focused on the lecturer. In the longer term these may be unnecessary technical limitations as the technology develops and progresses.

Secondly, the lecturers can see themselves on a TV screen. Their self-awareness increases and self-consciousness regarding hand movements and facial expressions is common. However, because the lecturer is such a static picture on the TV screen, the, hand movements and facial expressions become more crucial than in a classroom as they liven up the image.

Thirdly, as well as delivering the material, there is the issue of controlling the studio. This means operating the technology to switch the 'live picture' between the lecturer, their OHP equivalent (which are paper slides rather than transparencies), and a video recorder so that film clips can be included. Powerpoint screen display could also be added, and the lecturers have to remember to switch the sound on and off from the microphone, manage the volume of student responses and return phone calls, set up the technology to take multiple choice questions, and so forth. Approximately 5 hours' training, including practice, was given on this element to each lecturer.

These are essentially 'human programming' issues. The key issues that these elements exemplify are space, distance and time. There was a three second time delay between Derby and Israel, but instant response from Israel to Derby. This could disrupt the flow of communication unless carefully managed. Also, not being physically in the room to deal with classroom management issues could lead to frustration on the part of the lecturer.

Perhaps the biggest surprise though was the amount of time needed to redevelop the materials. Perhaps it is because Derby is still fairly new to IDL delivery method that lecturers found it difficult to spontaneously develop material as they went along. They found that the material had to be written specifically for IDL format and they could not ad-lib or 'wing it' (to use a colloquialism). The interaction needs to be built into the teaching materials in such a way that questions are written down on the visual slides to which students register responses. Multiple choice questions need to be planned in, as do yes/no polls. A certain amount of interaction is needed to involve the students in the class and prevent the session from becoming one-way delivery, although generating that interaction from the TPTC is actually quite difficult when students don't want to speak to you! This may be a

language issue as much as a space, distance or technology issue. Hence the design of the materials became of paramount importance and lecturers were re-writing materials for every session.

The key lessons learnt from the first 5 weeks of delivery were as follows:

1. Teaching in the TPTC is a very different experience to delivering a lecture in a lecture theatre, and therefore requires significant staff development.
2. Some lecturers will be comfortable delivering this way, others will not.
3. Quality of performance in the TPTC does not appear to be related to quality of performance in a 'normal' teaching setting.
4. Classroom management from a distance is exceedingly difficult.
5. Teaching materials need to be designed specifically for IDL delivery - you cannot substitute standard teaching materials for bespoke IDL materials.
6. Giving a television performance requires different skills to giving a lecture performance.

On-going research is being carried out to monitor the progress of this initiative but as yet insufficient data is available to assess the impact of the TPTC on both the lecturers and the students.

6.2 Developing 'Virtual' Academics

Heppell (1998) researched the area of information and telecommunications technology with regard to the wider teaching profession and established five certainties which are discussed below:

1. We have a deficiency model of teacher expertise, and this is not necessarily due to lack of desire but due to lack of opportunity. Teachers do not get the opportunity or staff development to allow them to master ICT.
2. As technology evolves, children evolve new capabilities. As such, when children leave school to go to university they will have new and different capabilities to those that the academics had when they left school. Academics need to learn to keep up with the 'children'. The cyberthinkers will have different learning needs.
3. The impact of multi-media technologies will be wide reaching within the field of education. Academics will need to learn to develop multi-media resources rather than offering one single mode of delivery.
4. ICT is an abbreviation of Information & Communication Technology. Note the 'communication' element; this is two way. Not only do academics need to learn to deliver materials using technology, they need to learn to interact with students through the use of ICT.
5. There are neither enduring standards nor protocols, and indeed there are unlikely to be. This whole area is going through such rapid and continual change that the standards and protocols would need rewriting as soon as the ink was dry.

Essentially Heppell is outlining a fast-moving future in terms of technology and ICT development, and a slow response from the teaching profession in upgrading their skills.

Halal & Liebowitz (1996:97) also view interactive multimedia systems as being the key to the future, but not at the expense of the academic. They claim that 'teachers will always play an essential role, but that role is changing to focus on the more complex issues in learning that machines cannot deal with.'

As the technology replaces traditional teaching and the academic role changes there is the possibility that academics will become deskilled. Willis (1996) warns us that television has resulted in declining literacy as people no longer need to read books, they can watch and listen instead. Calculators have resulted in declining numeracy. The ability to do simple mental arithemetic is being replaced by simply pressing a few buttons and getting the correct answer. The mental agility of the average human, particularly those going through school now as opposed to the older generations, is changing in its nature. Children now know how to operate 'clever' machines. Does this make them cleverer or dumber, and does it matter if the basis of their intelligence changes? Certainly their reliance on machinery is greater, and their ability to interrogate it is worth noting. However this poses yet more difficulties for academics - how do tutors know if a piece of work is genuinely a student's own work or has it been downloaded from the web? This could drive assessment processes back to being more examination driven rather than using other forms of formative and summative assessment.

Bajer (2000) claims that the learning curve needs to be redrawn, and this is applicable to academics as well as students. Traditionally, the learning curve has been an upward line of varying angle over time. Bajer claims that the curve should be redrawn as a short steep curve which then plummets back down to the bottom as a straight line before embarking on another short steep curve which then crashes back down again and so forth. Essentially, he is claiming that we will be learning about something which suddenly loses relevance because of a change in the world. In essence we go back right back to near the beginning and have to learn something new from scratch. So, for example, somebody may have learnt to use a typewriter. Word processors came along and their 'typewriter knowledge' instantly became obsolete and they had to learn how to use a word processor, although their keyboard skills would retain some value. Now voice recognition packages are being developed which will

make the 'word processor knowledge' obsolete, although basic editing functions will retain value, and so forth.

Bentley (2000) claims that our ability to thrive will depend on our capacity to learn, and we will need to be good learners in order maintain creativity. Learning leads to creativity and creativity leads to individual success. He defines creativity as:

> the ability to solve problems progressively over time and apply previous knowledge to new situations. It must be developed through the interaction of the learner, their underlying goals and motivations, and the resources and context in which they operate ....creativity is the application of knowledge and skills in new ways to achieve a valued goal (*ibid*:18).

Hughes (2000) concurs with this view and makes the case for key skills in the future being innovation, decision making and organisation rather than literacy, numeracy and IT. The extent to which these 'new' key skills can be developed in primary and secondary education is questionable as such widescale changes in the national curriculum are not forecast, so it will be the prerogative of tertiary and higher education to meet the key skills agenda. Barnett (1994:61) argues that this is not what higher education should be about:

> A higher education designed around skills is not higher education. It is the substitution of technique for insight; of strategic reason for communication reason; and of behaviour for wisdom.

Given that workplaces will require these key skills, would it not be better for them to be developed in school so that a greater proportion of the population gain competence in them? Redefining key skills to take them out of the school spectrum and placing them in the bounds of tertiary and higher education could be limiting to society and detrimental to the development of cognitive skills and subject specific knowledge that higher education currently offers (Blass, 1999). It would also broaden the curriculum and have a negative

impact on the need for specialist knowledge amongst academics as skill would replace knowledge in the curriculum.

If the virtual university comes of age, and the development of cyberthinkers becomes the student output from the sector, then academics themselves will have to master the cyberthought processes. In essence, this puts many of them on the same learning curve as the students, although the academics have the head start in subject knowledge and content, while the students may have the head start in process. It would not be unforeseeable for academics to be driven not just by technology but also by their students. The balance of power could shift as the process takes over from the content and the role of the academic as facilitator emerges. Academics must stay ahead of the game or they will lose credibility and status, and students will turn to the corporate university model for an alternative.

6.3 Developing 'Global' Academics

The global university is an extension of the virtual. It is virtual reality that makes globalisation and multi-institution research collaborations possible, and students equi-distant. The area of staff development necessary for the global university is that of contextualisation. Academics need to understand the culture and background of the students they are teaching so that they can contextualise the arguments to help the students make sense of them.

Revisiting the curriculum to design it for multiple contexts is a difficult task and one which will require every academic to be an international specialist in their field. This is a tall order and in reality what is likely to occur is exchange of information between academics so that they carve up the world (in terms of 'knowledge of') between them.

6.4 Developing 'Corporate' Academics

The corporate academic will be able to mix the worlds of university and business together for the benefit of the corporation, the university institution and the students. Many academics will work in the new Institutes of Applied Academic Disciplines and will be familiar with the validation and course writing procedures of the university as they will be continually validating new programme combinations to meet the needs of industry. Every industrial organisation will have its own suite of courses within the university, and while there may be some common elements between them, there will also be company specific modules to address the needs of that specific company. The question arises as to where the corporate academic's loyalty lies. Are they loyal to the corporation, the university institution or to their knowledge or subject base? This may be a new antinomy for the future academic, reconciling divided loyalties.

Corporate academics will also become skilled in the identification of corporate training needs and writing and developing courses to meet these needs. They will essentially be carrying out activities previously placed within a 'training department' but in a more disciplined and critical way, taking education into the workplace. This was defined by Pettigrew as the role of the Change Agent (see Pettigrew *et al*'s typology, 1981 in Reid and Barrington, 1997:188). It is largely an organisational development role for the training function in an organisation where problems are aided in resolution through the use of development initiatives to change the culture. Hofstede (1991) defined culture as the collective programming of the mind which distinguishes individuals in one group from another i.e. the common characteristics that interact to influence a group's response to its environment. Changes to either the common characteristics or the way they interact to provide a different response would result in a change in culture. This is the change agent role of workplace

education, the task of changing the underlying assumptions, values and/or beliefs, and requires academics to understand the culture of the organisations they are working with, as well as the organisational development skills necessary to bring about the required change.

Education in the workplace was initiated by the Quaker organisations at the turn of the nineteenth century (Kelly, 1992). The industrial revolution became a driving force for a greater need for literacy at work which led to an expansion of workplace literacy programmes. Mechanics' institutes flourished in the nineteenth century to teach workers the new scientific principles on which their work then depended, and working men's colleges started appearing towards the middle of the century, endeavouring to provide worker education for civilisation, but being diverted to vocational education before the century was out (Kelly, 1983). From these roots, workplace education is moving on to a sphere where the challenges ahead will require more widespread intelligence, ability and creativity in workers (Hillman, 1998). This implies a shift in the nature of workplace education from one focused on outcomes, such that workers can produce what they are supposed to, to one concerned with processes, such that workers can interpret, understand and innovate.

Hopkins (1985:2) concludes that the immediate aims of worker education are most frequently linked to organisational responsibilities, individual capacity and decision making processes. He draws the distinction between 'education for living' and 'education for earning a living', suggesting that most worker education is for the latter, not the former.

Korsgaard (1997a:268) establishes the current imperative for education in the workplace:

> As a factor in the changing of society from the 'world of the hand' to the 'world of the mind' it seems that the relation between the mute base and the articulate superstructure will be radically changed once again.

However, Korsgaard (1997b:18) warns us of the dangers of the workplace taking over education:

> Education has become decisive. Practically the whole educational world has apprehended the goals of labour-market policies and this has consequences for the education for individuals, enterprises and nations. This accentuation of educational expectations within the labour market has, however, meant that other goals for educational policies have receded into the background ..... Ideals about social justice and personal development are exchanged for concepts from management discourse such as competition, quality and productivity.

Taking an iconic representation it would be inappropriate to see two mutually exclusive circles of work and education rather than there being at best an eclipse or at least an intercept. But it is important as to which set eclipses which. If the workplace eclipses education then the education is corrupted in line with Korsgaard's comments above. It is the manipulation by the corporation for management ends, and hence education for earning a living. If education eclipses the workplace then we are creating an environment that can improve the effectiveness of the individual in terms of performance in the workplace at the same time as developing individuals as educated selves (and vice versa), and hence education for living.

When the workplace eclipses education there is a propensity for inbred inequality. Employers tend to discriminate as to who can and who cannot be supported in their educational endeavours. Younger workers are more likely to be trained than older workers, men more so than women and the skilled more so than the unskilled (Tamkin and Hillage, 1997). In turn this continuing development of inequality can lead to elitism and this fosters prejudice. It is important that the academic counters this development.

There is a clear imperative for education in the workplace, and the development of the academic in this role. 'A literate, educated, inquisitive, problem-solving workforce is essential to the survival and competitiveness of business and industry' (Rowden, 1996:3). Keeping the workplace and education as two mutually exclusive elements is no way forward,

and would lead to the corporate university competing against the future public university which would be the start of the end of the public university. An intercept of the two must occur for organisations and universities to survive the challenges of the twenty-first century.

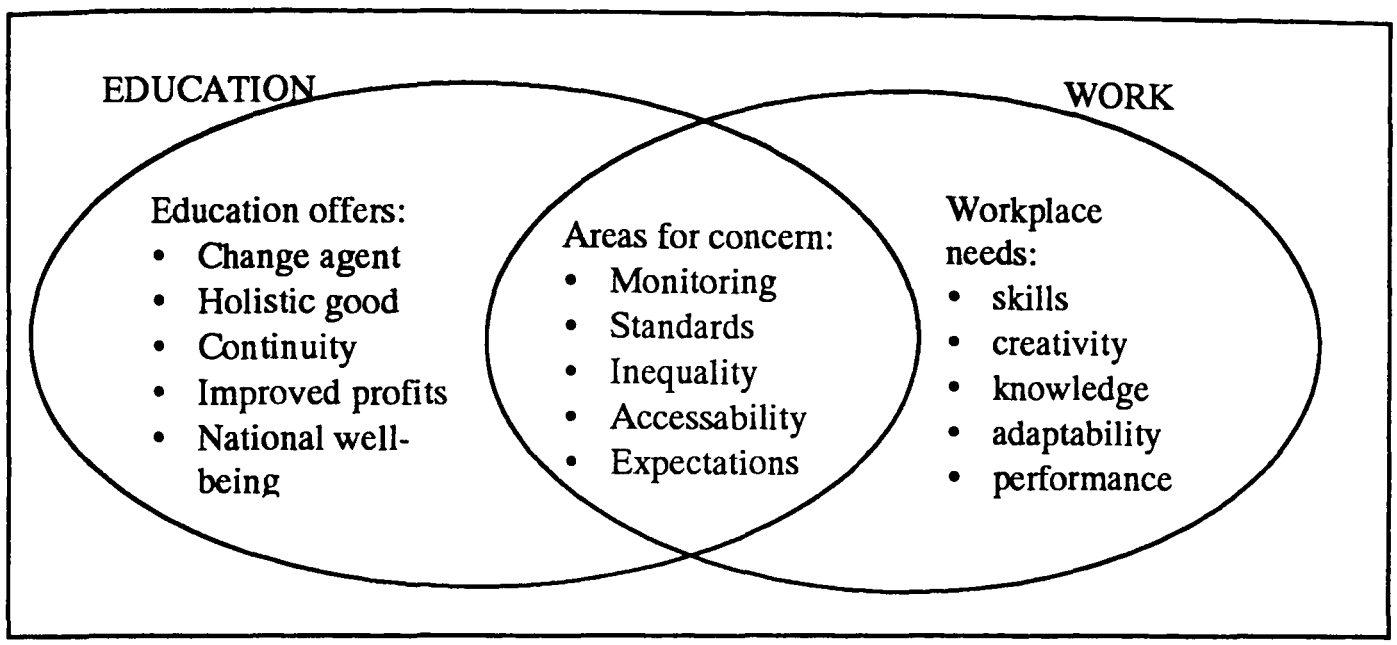

Figure 6.1: The Education: Workplace Eclipse.

It is important though that the eclipsing of one set with the other occurs in the correct overlap. An eclipse of the workplace on education could result in the corruption of education; possible lowering of standards, increasing inequality and elitism, prejudice and the creation of false limits to individual potential. An eclipse of education on the workplace is more ideal, leading to improved performance for the organisation and better educated individuals in their own right. This should not be contradictory to any of the ethics, values or purposes of academics or university institutions.

6.5 The Emergent Future Academic

The number of developments taking place in education as the future university emerges are immense, and the majority require a new skills set to that held by the current academic. The

key changes can be mapped in terms of what change is occurring, how this will impact on the role of the academic, and what it will replace in current practice.

New Role for Academic	New Skill/Knowledge needed to fulfil new role	Old Skill/Knowledge being replaced
New forms of conversation with students	New language, syntax and mode of conversing	Lecture and tutorial systems
ICT usage	Use of technology as a means of communication	Use of technology to help produce aids to communication
Monitoring of performance	'Policing' students in terms of tracking logins, contact, and electronic assessments	Mass marking of student's written assessments
Increased visibility	Recorded and broadcast delivery	Lectures in one place only to one group of students
Creative & Innovative	Continuous capacity to learn to keep ahead of pace of change	Knowledge base will change quickly over time, so previous knowledge becomes obsolete
Ability to deliver key skills plus cognitive skills plus development of reason	Addition of key skills to curriculum which adds the development of abilities as well as development of processes and knowledge	Narrow delivery according to learning outcomes will be superseded by broader development outcomes and generic learning outcomes
Cyberthinkers	Development of cyberthought processes including rapid information processing and thought processes	Specific narrow academic focus with limited application, or any retrothought process contributors
Global appreciation	Increased knowledge of international contexts and applications and development of comparative analysts	Specific comparative field will disappear as everyone becomes a comparative analyst
Role of change agent	Organisational Development skills	In-house training courses to meet one-off needs.
Delivery of workplace education	Ability to balance corporate goals with educational values and standards	Isolation of academics from 'real' world

Table 6.2: The Emergent Model of the Future Academic.

Much of what is to be replaced is the 'residual' model of the academic which has developed through history, myths and philosophical ideals. The emergent academic will be a very different person, and indeed it is questionable as to how many current academics will have the skills and abilities necessary to make the changes required. As the future university

emerges, a new generation of academics may emerge. What is to become of the 'old' generation is unclear, and much will depend on institutions' individual approaches to the changes. There is an old business adage 'if you can't change your people, change your people' (anon). The future university will be operating in a fast moving, highly competitive world. While traditions such as tenure once offered a 'safe' workplace to the academic community, such security will not be appropriate in the future university.

Nobody knows how many current academics will make the transition to the future university. Firstly, institutions need to provide the opportunities for academics to start to make the transitions, improve their ICT skills and learn to play with the technology that is being developed. This will require investment both in technology and in staff development. If academics are not to be deskilled, staff development and investment will be the key factors that will help the emergent academic model develop.

Chapter 7 - THE 'FUTURE' STUDENT

When considering the impact of the future university on the academic, reference was made to the concepts of 'open, distance and flexible learning'. Distance is no longer relevant as the virtual and global elements of the future university will make all students equi-distant, and flexible is catered for by the multiple media involved in virtual delivery. Open, however, is a different matter.

7.1 The Student as an 'Open' Learner

Barnett (1990:8-9) reviewed the nature of higher education to establish 12 broad aims, ideas and values:

1. pursuit of truth and objective knowledge
2. research
3. liberal education
4. institutional autonomy
5. academic freedom
6. neutral and open forum for debate
7. rationality
8. development of student's critical abilities
9. development of student's autonomy
10. student's character formation
11. providing a critical centre within society
12. preserving society's intellectual culture.

In essence, to be able to achieve the above criteria, Higher Education must develop 'independence of mind' in students, and as such be an open learning system in its ideal self.

When a child is born it starts learning. It quickly learns that if it cries it gets attention, and over time, the child learns to communicate in a more sophisticated manner. Children continually seek new experiences. They want to employ their senses fully in new ways; touching, tasting, listening, smelling and watching, and there is a sense of wonder and delight

in something new. A toddler is almost the ultimate open learner. Von Oech (1990:85) claims 'every child is an artist. The problem is how to remain an artist after growing up.' What is it that happens to us as we get older that makes us less open?

Egan (1986) cited by Brookfield (1987:111-2) argues that schools inhibit divergent responses by punishing questioning by pupils as impertinence. This is then reinforced as children become more socially aware, by representations in media of large-scale social dissent and other forms of divergent thinking being ignored or punished by society. Maybe this is where the artists go.

Cunningham (1987:40) states simply that 'open learning won't work unless learners learn how to learn (and learning to learn won't work unless there is openness in the learning process)' and as such he proposes a self-managed learning model as one possible solution to overcoming the barriers to learning. Removing the barriers would certainly remove the negative forces operating against open learning, but this may simply be the equivalent of 'hygiene factors' leaving people at a zero start point rather than a 'motivator' which would be a positive force, encouraging them to learn (see Herzberg *et al*, 1959).

Boot and Hodgson (1987:5) highlight the fact that definitions of open learning seem to 'revolve around the notion of freedom from constraints on the learning process' which can be either administrative and/or educational, such that 'removing the former might be with the intention of increasing logistical independence, while removing the latter might be with the intention of encouraging independence of mind.' The logistical independence element is covered by the term 'flexible learning', which leaves us with 'encouraging independence of mind.'

As a starting point in examining how to develop open learning, the question of what inhibits openness needs answering before we can go on to look at whether or not it can be encouraged.

Starting from the premise that all individuals are learners, and that all learning is open, then the box below represents the independent mind of any one individual. That independent mind is an open learning opportunity. Flexible learning is a subset of that, when that individual employs formal learning strategies which involve more than the self in isolation. Distance learning may not be an issue depending on how far we have moved from internationalisation to globalisation with regard to development of higher education.

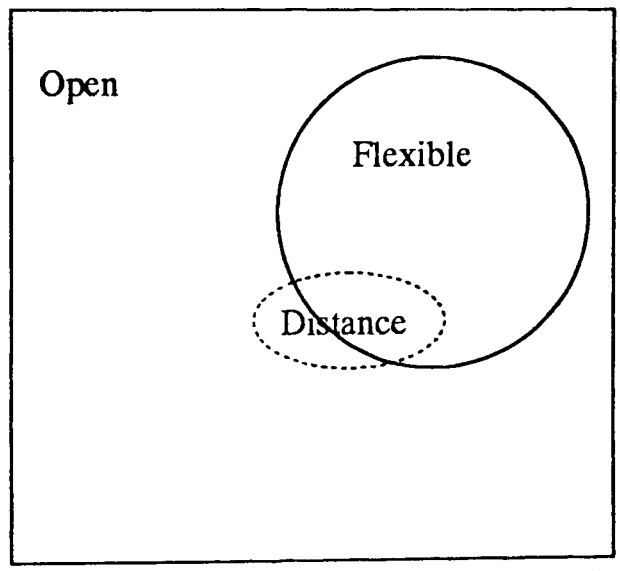

Figure 7.1: Learning Fit: Open, distance and flexible.

Depending on the limitations imposed on the individual, be they self imposed, technologically imposed or externally imposed, distance learning may be a flexible strategy employed or it may be a part of open learning which is unavailable or distant to the individual. In essence distance education is viewed here as a barrier or irrelevance, hence it is represented by a dotted line - it is a limitation that an individual would ideally like to see removed. Distance education is representative of the fact that there are areas that are excluded from the technologically advanced networked society, the virtual university, and therefore is evidence of a lack of globalisation.

For a mind to be independent there must be free will. Let us start by looking at the possible paradox of free will and determinism. Determinists (see for example van Inwaagen, 1975) believe that the state of the world determines what happens in that state, ie our actions are predetermined by our environment. They have difficulty with the concept of free will because if every human action is causally necessitated then no one could act otherwise. As such, no one has free will (*ibid*). Alternatively, if one believes we have choices and preferences, then the two become more compatible. While the circumstances may cause a situation, we will have choices in how to deal with it (Aune, 1967 and Lehrer, 1968). Through the development of the thought processes that allow us to recognise and make choices, education has a contributory role in developing free will, or constructing the boundaries of determinism.

Free will, in itself, is not an easy concept to capture. As Watson (1982) points out, the use of the phrase should not preclude there being more than one kind of freedom. Ayer (1954) raises the question as to whether the opposite of freedom is causality (as the determinists would have us believe) or constraint? He establishes a link between free will and acting morally responsibly, claiming that when a man's choices become quite unpredictable, we look upon him as a lunatic rather than as a free moral agent. He demonstrates that it is because we have choice over our actions that we are held morally responsible for them. This suggests that open learning is about morality and developing our ability to make choices.

In a corporate university context this is equally important. 'Business Ethics' is a growth area in business development, though whether business ethics have any different base to any other form of ethics is a point strongly contested. Either way, Maclagan (1998:174) argues that ethics in organisations is a matter of individual responsibility, and that 'without some

attention being paid to the development of individuals' critical capacities and personal qualities' then the institutionalisation of ethics in an organisation will contain many gaps. The future student, therefore, needs to be an open learner, independent in their mind, with critical and moral reasoning abilities which guide their actions. The role of organisational culture will impact on this openness in the corporate university by once again defining boundaries for action and applying the corporate mode of reasoning.

7.2 The 'Corporate' Student

The corporate university offers us models of co-operative and corporate education. With the corporate classroom we see full-time workers studying in education. With co-operative education we see full-time students in the workplace. The value of work experience is unquestionable. The DfEE (1998) found that sandwich students enter their first permanent employment positions before students who have not completed the sandwich work year out.

The number of students in debt who are working part-time to supplement their full-time studies is also increasing, but this pattern is not spread uniformly throughout all universities. If you ask a lecture group at the University of Derby to raise their hands if they have a part-time job, you will always see a show of at least 75% of hands. If you were to do the same at the University of Nottingham, you would be able to count the number of hands raised as it would be so few. While the work experience may be of benefit to the Derby students, it impacts significantly on how they view student life compared to the students at Nottingham, and their available time and resources.

Co-operative education could benefit all students. Firstly it allows them to gain a variety of useful work experience during their period of full-time education. Secondly, it allows

students to earn some money during their placement periods to support their university attendance periods. Finally, it allows students to gauge whether or not they really do want to do that job when they leave university, and can help them make different and better career choices.

7.3 The 'Virtual' Student

Barnett (2000a) sees three responsibilities of higher education in the age of supercomplexity:

1. to assist students in reflexive biographies.
2. to develop citizens who can both engage and disengage.
3. to make a direct difference to the emerging world of supercomplexity.

This is quite a tall order. Students need to develop their sense of self identity, a sense of knowing and a sense of action. Teaching, according to Barnett, should create disturbance in students but not so far as to leave them anxious. Avoiding anxiety could be difficult as universities move towards the development of cyberthinkers.

Wenk Jr (1999:129-140) outlines a taxonomy of influences on individuals of information being transmitted at the speed of light by electronic techniques:

1. It jars normal cadence of human activity beyond natural rhythms (*sic*)- information becomes available in an unsystematic manner, such as sometimes there is overload and at other times, drought.
2. It squirts a firehose of undigested information overwhelming the human capacity for processing (*sic*) - we have so much information coming at us that it is difficult for us to make sense of it all.

3. It compresses time available to test the truth of raw information and to transform it to knowledge and then to understanding - because we have so much coming at us in such short periods of time, we have to process information into decision making more quickly.
4. It coerces responses to messages so swiftly that decision making shortcuts critical analysis of options and consequences - decision making will occur on an intuitive basis rather than having tested a variety of options to see which is best.
5. It generates hectic information environments for both work and play that increase stress, degrade individual performance and undermine personal satisfaction - working in this manner takes the fun and pleasure out of work as you are subjected to such continuous substantial pressure as to put you under stress.

Earlier, cyberthinkers were defined as authentic, autonomous, humane, creative, critical and positive thinkers who could combine knowledge and being. In order to be effective in the future, they will have to do all of this, and do it quickly. As Kerr (1995:5) notes, 'history moves faster than the observer's pen', and the cyberthinkers will need to be adapting to the coming changes before they are even sure that they are happening.

Cartwright (1996) raises broader concerns around the concept of virtual reality, questioning its impact on consciousness. When we are in 'virtual reality' a machine has complete control of our senses. This is individual control when it is virtual reality, and group control when we are operating in cyberspace. Hence cyberspace is a consensual hallucination shared by a group. This raises a number of issues for Cartwright:

1. Reality contact - will we lose touch with what is real and what is virtual, and how closely will the confusion between the two resemble schizophrenia in the human brain?

2. Parallel communications and lives - will we hold different conversations in a virtual communication from those we would hold face to face? To what extent does the interface give us a false sense of security or a different sense of being?

3. Alternative realities and states - virtual playgrounds, multi-user games and other alternative realities created virtually could lead us to feel anything from delighted to upset depending on its outcome. To what extent will we be able to hold on to the different emotional states in the different realities, or will they merge leaving us dislocated?

4. Embodiment and disembodiment - when we are in virtual reality we can change who we are. Literally, we can swap our body for a 'better' one. What happens if we don't want to swap back? This could be particularly disturbing for people with disabilities or anyone with an eating disorder or such like.

5. Gender swapping - as well as improving our bodies, we could change them to the opposite gender in virtual reality. This may be misleading to potential suitors, but can be beneficial in allowing people to see what it is like to be of the opposite sex.

6. The decentred self - in creating a virtual ego-centre we could weaken our sense of ourselves, weakening our self-esteem and making us feel insignificant and worthless, particularly if we try to compare the 'real' us with the 'virtual' us that we have created.

7. Multiple identities - as it is possible for us to do all of the above, it is just as possible for us to do it more than once! There is nothing to stop us from being multiple people in virtual reality. In the real world, multiple personality disorders are seen as manifestation

of mental illness. The extent to which the opportunity or encouragement to have multiple selves in virtual reality will impact on the single self in the real world is yet to be seen.

8. Distributed being - what would happen if we pulled all of our multiple selves into the same being? Would we create ourselves as a 'super-person'? How tolerant would we be of others if this were the case?

9. Dissociative reactions and psychotic breaks - potentially, virtual reality could alter our consciousness, how we interact socially and even what it means to be human. It may bring new kinds of emotional disturbances - loneliness, alienation and disembodiment.

Cartwright (2000:149) ends by warning us that 'only travellers who are well equipped emotionally and understand the psychological terrain should venture there' (there being virtual reality).

This is particularly disturbing for students. Currie (2000:6) suggests that

> depression is one of the most misunderstood medical conditions despite the fact that it affects one in four people and is thought to be the reason for more than 70% of the 6,000 suicides that take place in the UK every year.

This figure rises to 1 in 3 according to a Depression Alliance survey of 1,069 people aged between 15 and 34 (*ibid*). Students already have exceedingly stressful lives having to balance finances, studying, work and home lives, with exam pressure, the need to make new friends, and finding the right career start at the end of their courses. An unpublished study by Dr Ann Davis of student counselling in universities suggests that the percentages of students suffering from some form of psychological distress is even greater than the one in three figure quoted by the Depression Alliance. This is a very disturbing foundation to lay for the future of the university and the development of the cyberthinker. It may be that the

interaction with the corporate element may ground the students, and hence the boundaries imposed by the corporate university could prove beneficial in this instance.

7.4 The 'Global' Student

Cartwright's concerns around the development of virtual reality were based largely on westernised assumptions. They are perhaps compounded if we move beyond first world civilisation into less developed countries. Here the students will be experiencing a different way of life altogether and then immersing themselves in this western creation of virtual reality. The change, dichotomies and experiences will be exaggerated for these students and could lead to greater confusion and emotional extremes as their real world and virtual worlds will be even further apart.

Language is also an issue for the global student. Again there is a western assumption that tuition will be largely in English. When the African Virtual University receives broadcasts from American and European universities, the majority of these are in English, although there is also a French stream for the francophone countries. However, the need for more global languages will become apparent, and while we may not restrict globalisation of education to a purely English model, it would not be unforeseeable for it to be based on a model of English, French and Spanish or Portuguese. Students in countries where these are not the mother-tongue would need to become fluent in one of these languages in order to progress their education. However, language impacts on the construction of thought and therefore again constrains development.

7.5 The Emergent Future Student

To study in the future university is going to be no easy task. Essentially the student needs to develop as an 'open' learner, gaining 'corporate' experience, coping with 'virtual' realities and crossing 'global' boundaries.

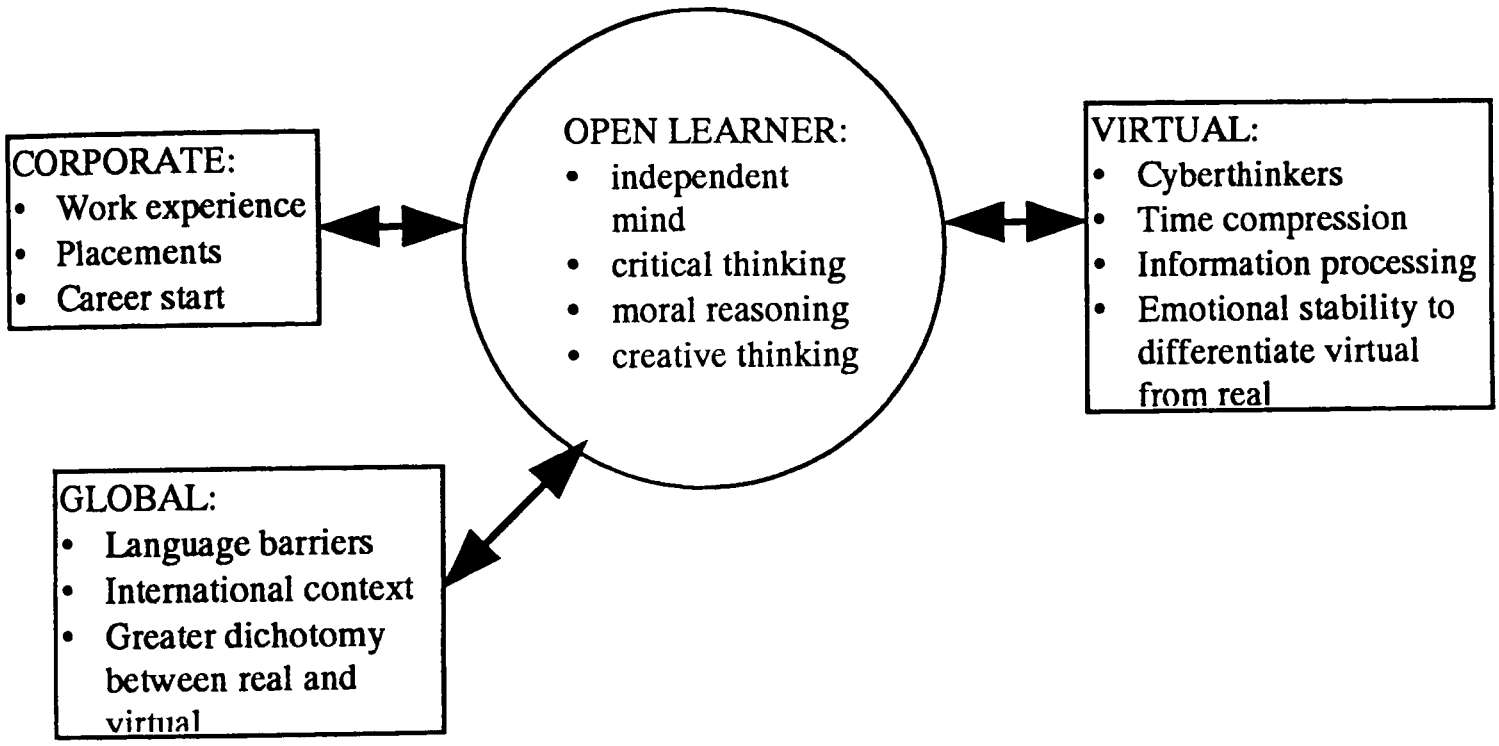

Figure 7.2: the emergent model of the future student.

Chapter 8 - CONCLUSIONS

This thesis set out to map the residual, dominant and emergent models of the university. Not only have these been discussed, but further 'future' models have been presented.

8.1 A critical evaluative perspective.

Having criticised futures methodology for taking the moral high ground and producing normative models (Bell, 1997), still the alternative models presented here are largely normative, but also critically evaluative. The models are normative as they propose 'a better future' and critically evaluative as they propose an alternative, more 'radical' perspective (see for example Legge, 1995). While a critical evaluative approach may be taken, it is difficult to retain objectivity and therefore the result is likely to be normative. Because the underlying motivator was the dislike of the emergent model, from a critical evaluative stance, the future model could be nothing other than normative.

Recognition of the inevitability of this process does place this thesis truly in the field of futures studies rather than a philosophical interpretation of the present.

Manicas (2000:33) identifies Higher Education as being at the 'brink', being subjected to 'forces from the past' and 'forces from the future'. From the past he identifies the symbiosis of science, industry and the state; industrialisation and urbanisation; democratisation; and the accelerating demands for specialised knowledge. From the future he foresees globalisation; higher education no longer being affordable; and computer-mediated technologies. Manicas's view is far from normative, painting a bleak picture of higher education being on the brink of major changes moving it away from its historical development. In essence he is mapping the emergent model rather than futures model.

Rooney and Hearn (2000) believe that the element of higher education that is responsible for the development of the mind is what will maintain its uniqueness. They make three assumptions about the mind: there is substantial variation in the processes by which minds do their work; a mind's productive capability is highly dependent on the nature of the reinforcement it receives from its environment; and minds do not exist in isolation from other minds. As such, 'the exchange of knowledge creates new knowledge and hence there is a mismatch between the economies of industry and the economics of knowledge production' (*ibid*:92).

There are three futures scenarios for the university according to Rooney and Hearn:

- The do-nothing scenario - let the momentum of history and the uncertainty of the future determine their strategy.
- The commodified university - use technology that is available to move more toward a commodified model of knowledge distribution.
- The on-line learning community - use technology to connect and increase the diversity of knowledge through networks.

In attempting to achieve the last of these, it would be easy to see how universities could slip into the commodified model. In trying to establish networks, modules could be produced which in reality could result in education becoming a commodity rather than a community. While an on-line community may be the normative model, the transition and development required to move to this may be beyond the capabilities of many academics. The future academic has been identified as a very different being from the current academic, and commodification may be a step towards communitisation in the long run as universities

evolve. The implications for the role of academic management have not been explored in this thesis, and are indeed an area which should be identified for further research.

8.2 Antinomies revisited.

In the introduction, ten antinomies were introduced stemming from competing ideologies. These can now be remapped with regard to the futures model:

1. Liberal or vocational - while the corporate university is clearly concerned with vocational elements, the development of cyberthinkers has liberal roots and the expansion from international to global stems from the desire for both. This remains an antinomy for the future (see chapters 3 & 5).

2. Broad or specialist - the split of the university into schools of applied disciplines and schools focusing on pure academic areas will allow both of these extremes to co-exist, although in the future they will be in separate institutions rather than as one (see chapter 3).

3. Research: For or Against? - the production of knowledge will remain although the funding for research and the nature and process are likely to evolve as we move from Modes 1 and 2 (Gibbons *et al*, 1994) to distributed knowledge production (Gibbons, 1998) (see chapter 3).

4. Research: Pure or Applied? - Again here we will witness shifts. While the trend is currently turning towards applied research so that the outcomes can be made 'profitable',

there will be a return to pure research as gaps in the knowledge base emerge (see chapter 3).

5. Lecturers: Expository or Didactic style? - The role of the lecturer will change considerably, and it is imperative that it does. It would be an impossible task to expect academics to know their subject knowledge on a global scale, be comfortable and competent with delivery through virtual means, and be able to apply and generate income through the corporatisation of their being. Lecturers must adapt to a more facilitative role and expository style for the sake of their own sanity (see chapters 4 and 5).

6. Lecturers: Passive or Active role? This will perhaps distinguish the good from the great. Maintaining the right balance here will be essential. The great will be able to actively inspire and motivate students while allowing them to take responsibility for the direction and depth of their learning, while the good will merely provide the passive supportive role (see chapter 6).

7. Local or Global? - This antinomy is another that is irresolvable. The answer is both. The future university will operate on a global scale but will need to allow students to localise and contextualise their studies in order to prosper (see chapter 5).

8. Physical or Virtual? - On balance, virtual will be the dominant *modus operandi*, however there will still remain some small, specialist institutions operating on a physical basis, providing an alternative student experience to those that can afford it; in essence a return to the residual model. Otherwise the massification of higher education will be lead to virtual universities (see chapter 4).

9. Democracy or Economy? - While these two may be conflicting in nature, they need not be mutually exclusive. A greater sense of democracy can lead to economic prosperity as the perceptions of other countries can affect their trade operations with you. This said, however, the focus of the corporate university is clearly economic, and the digital future also has economic foundations (see chapters 3 and 5).

10. Individualism or Collectivism - Again this will separate the good from the great. While the massification of higher education will inevitably lead to collectivism, it will be the great that manage to maintain a personal touch with students through their utilisation of lecturers. As virtual delivery expands this may become greater, as e-mail, electronic noticeboards and such like all have 'author' details, while comments and discussions in lecture theatres and seminars can remain anonymous as it is an impossible task for lecturers to learn the name of every student they teach across the board. Virtual developments may reduce anonymity (see chapters 4 and 6).

Duderstadt (2000) outlines the challenges of change for the university for the 21st century as including cost, price and value judgements of a college education. While the American 'university used to be a safe haven where families sent their children, now our knowledge-intensive society is too dependent on the modern university' (p.23). He goes on to raise issues of changing relationships and social contracts and the cost of academic excellence within limited resources. He outlines the almost impossible task ahead:

> Beyond the traditional missions of teaching, research and service, the university is now expected to provide the intellectual capacity necessary to build and sustain the strength and prosperity of our society. Through its research, the university produces the new knowledge so necessary to the well being of society. It trains the teachers and scholars, the leaders, the managers, and the decision-makers necessary to apply this knowledge. And it provides the key to knowledge transfer, through its graduates, through traditional scholarly mechanisms such as publications, through public service, and through companies spun off its research activities (Duderstadt, 2000:33).

Such a view of the future university not only encompasses antinomies, but raises issues regarding stakeholders.

8.3 Stakeholder Analysis.

In chapter 3, when outlining the corporate university, a stakeholder analysis of the current public university was presented:

Stakeholder Group	Input	Output
Central Government	Money	Services (chiefly graduates)
Employees	Labour, Time	Money
Industry/Employers/ Shareholders	Research contracts, sponsorship	Research findings, employees
Local Government	Money	Services
Professional Institutes	Advice, Money	Members, courses
Research Councils	Money	Research findings
Students	Money, Effort, Time	Education
Suppliers	Goods/Services	Money

Table 8.1: Stakeholder Analysis for a Public University.
Source: Allen (1988) The Goals of Universities. p27.

A similar analysis can be carried out for the future university. Central Government will still provide money in terms of funding for home students, but this will decline over time as the self-funded element increases so that the Government is only committed to helping out students in hardship, similar to a scholarship scheme. They will still benefit from the increased number of graduates in the labour market, but as this will be on a global scale, there will be an extent to which all countries and Governments will benefit from the holistic provision of higher education globally.

Employees of the university will continue to give labour and services in return for money, however more of this is likely to be linked to corporate ties and profitable developments rather than number of hours contracted for student contact time. Essentially the basis of the

employment relationship will change from one of buying time to one of sharing opportunities.

Industry clearly has a lot to gain through the corporate university model. They will get the pick of the graduates from investing in co-operative education; profit from research applications through tripartite subsidiary companies; benefit from the results of mode 1 production of knowledge to drive forward their mode 2 areas; and will benefit from quick response times to workplace education needs from the institutes of applied academic disciplines.

Local Government is an interesting area to consider as it is questionable whether or not any services, contracts or staff will be employed in the public sector for this purpose in the future, or whether the whole of the local government provision will have been privatised. When the latter occurs then local government will convert to the corporate model. Indeed, it is arguably already progressing down this route following the process of compulsory competitive tendering in the past and the current 'Best Value' initiative. Until such time it will continue to provide money for services in the traditional manner it always has done.

Professional Institutes will have the opportunity of broadening their horizons through the growth of the corporate university as more and more students will have the opportunity to gain professional qualifications. Also, they will be able to expand into the global market with internationally recognised professional standards, which can be delivered through virtual means. The future could lead to national professional bodies competing with each other or they could collaborate to offer a truly international professional education scheme. However, they will still retain their exclusivity and 'limit' entry to their respective professions.

Research councils are likely to disappear as distributed knowledge production becomes more corporatised. Also, as universities operate on a global scale and international collaborations are established, the location of research will become questionable as most funding councils are based on a national provision. There may still be some funding available, but this will be through the charitable foundations (linked to corporations), or targeted to meet specific governmental needs (such as policy evaluation). If Blunkett's (2000) vision of the three tiers of universities becomes a reality then it will only be a few elite institutions that will be involved in the funded research community, with the remaining universities being excluded from the process.

Students will clearly maintain their status as stakeholders but as the university changes and the students move away to corporate residences, or opt for virtual delivery, or emerge from global recesses, their status will change. They will continue to bring money and effort to the university in return for education but the provision will be more guided and facilitated than 'done to them'. They will also be from a greater range of backgrounds, globally and virtually, and will have a broad range of expectations and preferred ways of working.

Likewise, universities will continue to need supplies, so suppliers will provide goods and services in return for payment.

Other stakeholders may also emerge. Software providers, for example, will have a key role in the virtual university. They will need to provide the platforms on which the virtual university can build and operate, and should benefit from the ideas and input that academics can give relating to how they want to operate and deliver materials. This could be a two-way process rather than the software houses driving the university.

Global alliances such as the European Union or COMESA may become important stakeholders as they are more likely to fund comparative international research than individual nations are, and they will increase mobility of students between national boundaries. In return they benefit from the globalisation process and the provision of more graduates which can lead to greater economic prosperity.

This analysis can be tabularised for ease of comparison with the dominant model of the current situation presented earlier.

Stakeholder Group	Input	Output
Central Government	Reducing levels of money	Services, graduates, economic prosperity
Employees	Labour	Salary, opportunity for profit
Industry/Employers/ Shareholders	Placements, investment, research funding	Graduates, research findings, collaborative profit
Local Government	Money	Services, graduates
Professional Institutes	Advice, money	Members, courses, expansion
Research Councils	Reducing levels of funding	Research findings
Students	Money, effort	Education, employability
Suppliers	Goods/services	Money
Software Houses	Programmes	Direction, skills, ideas
International Bodies	Money	Graduates, economic prosperity, cohesion

Table 8.2: Stakeholder Analysis for the Future University.

While the tables may look similar to the eye, there are subtle shifts in power. Globalisation will lead to a decline in national power, and particularly local power. Emphasis is placed on profit opportunities in the outputs when it previously never appeared. Funding levels are reducing levels of input from external bodies and are increasing levels in collaborative arrangements such as those established in the corporate university. Finally there is the global aspect with the introduction of the international bodies.

Skolnik (2000) analyses the concept of the virtual university and the effect it will have on the Professoriate. He has three virtual 'visions' which are the move from campus-centric education to consumer-centric (a shift in stakeholder power towards the student); from local protection to global competitiveness (a further shift in power away from the local market to the global arena); and from marketing to mergers (the idea that universities will merge in order to tackle the other two visions as they will be unable to market themselves credibly within this field). With regard to the future of the academic, Skolnik paints a bleak future:

> The competitive pressure, insecurity and instability that will likely threaten many colleges and universities in the world of the virtual university may lead them to adopt one or more of the following 3 strategies in dealing with faculty; economising, controlling, and restructuring (*ibid*:59).

Inayatullah (2000) agrees with this forecast, but questions whether such 'mergers' could actually lead to academic bliss. He sees the drivers for the future as being virtualisation, globalisation, multiculturalism and politicisation. His view could be interpreted as even more preferable to the one presented in this thesis. While virtual and global are there, multiculturalism includes the wider population beyond those within the reaches of western civilisation, and politicisation goes beyond corporate control. Essentially Inayatullah presents a more inclusive and wider range of stakeholders than are currently evident in universities. This raises questions as to whether or not a multinational university could exert similar political influence as multinational companies, which is another area for further research.

8.4 From 'Knowing to Being'.

As knowledge is replaced at an ever increasing pace, Barnett (2000a) identifies the challenge in supercomplexity as one of being rather than knowing. Crossman (1999) operationalised this as moving from being skilled in the '3Rs' to developing ability in the '4Cs' (see p.75),

these being critical thinking, creative thinking, comspeak (the oral replacement for written language) and calculators. In some ways this returns the university to its liberal roots.

The residual model of the university is that of the liberal education institution where students and dons discuss philosophy and education of the 'whole man' occurs with no specific purpose or intention. The development of thought processes was the key element and reasoning.

The dominant model emerged with the massification of higher education and the institutions' responses in terms of modularising undergraduate education, and distancing of the student-academic relationship. The shift of emphasis changed to knowledge, especially in terms of assessment processes and examinations. Ideas such as 'key skills' have emerged, vocationalisation of education, and linkage of undergraduate studies with professional qualifications. The focus is very much on the knowledge base, and proving that students know, understand and are able to do.

The emergent model is starting to see a reversal as questions are being asked about the quality of the content of degrees and the value of modular based assessments. Somewhere the holistic overview has been lost and the development of the individual in the liberal sense has been missed as commodification and modularisation have become widespread. A collaboration of universities is currently looking for funding to research and develop the possibility of 'development outcomes' to sit alongside the model of 'learning outcomes' which many universities employ. (This collaboration currently comprises Derby, Durham, Luton and Sheffield Hallam Universities but is in its gestation stage.) The idea behind development outcomes is that the liberal essence of education returns and universities will need to take a holistic view of academic programmes and progress rather than fragmented

modular design. It will also start to address their issues of shifting from 'knowing to being' (see chapters 4 and 8).

8.5 Mapping the Future University.

The future university in itself is essentially corporate, global *and* virtual. Each of these have been considered individually in this thesis, and indeed the emergent and future nature of each has been modelled. The potential impacts of these developments have been discussed in relation to the concept of the academic and the nature of the student, and considerable areas of change have been noted. In bringing the whole picture together, it is difficult to achieve the right balance between a representation that shows enough detail to be meaningful, and a model which is so overloaded with detail that it becomes unusable.

While many authors may raise concerns or issues for the future university, there is no single definitive model to date. Duderstadt (2000) offers a range of possible futures including the world university (global); the diverse university (addresses access and levels of education); the creative university (the need for innovation and creativity in society); the cyberspace university (virtual) and so forth. Wildman (2000) prefers simply to raise seven issues for the future university, each of which is addressed within the future university model:

1. The emergent knowledge economy - the need for insight, hindsight, foresight and wisdom (which in itself justifies the need for futures studies such as this one).
2. Globalisation - the model of the global university.
3. Community capability - the need for the global university to be locally contextualised.
4. Pedagogy of alternatives - the need for differing modes of delivery and education.
5. The Post-Market economy - an emerging North/South or Rich/Poor divide which may be addressed through the spread of digitalisation.

6. Fragment futures - the broken vase picture; how can the pieces be reassembled to work in a different manner.
7. New Renaissance - need to undo the narrowing of rational inquiry; the move from knowing to being.

In attempting to pull together the key ideas outlined in this thesis, the following model maps the residual, dominant, emergent and future universities. It attempts to provide an overview of changes occurring through time, rather than the detail of each element. Such detail can be extracted from the preceding chapters in this work.

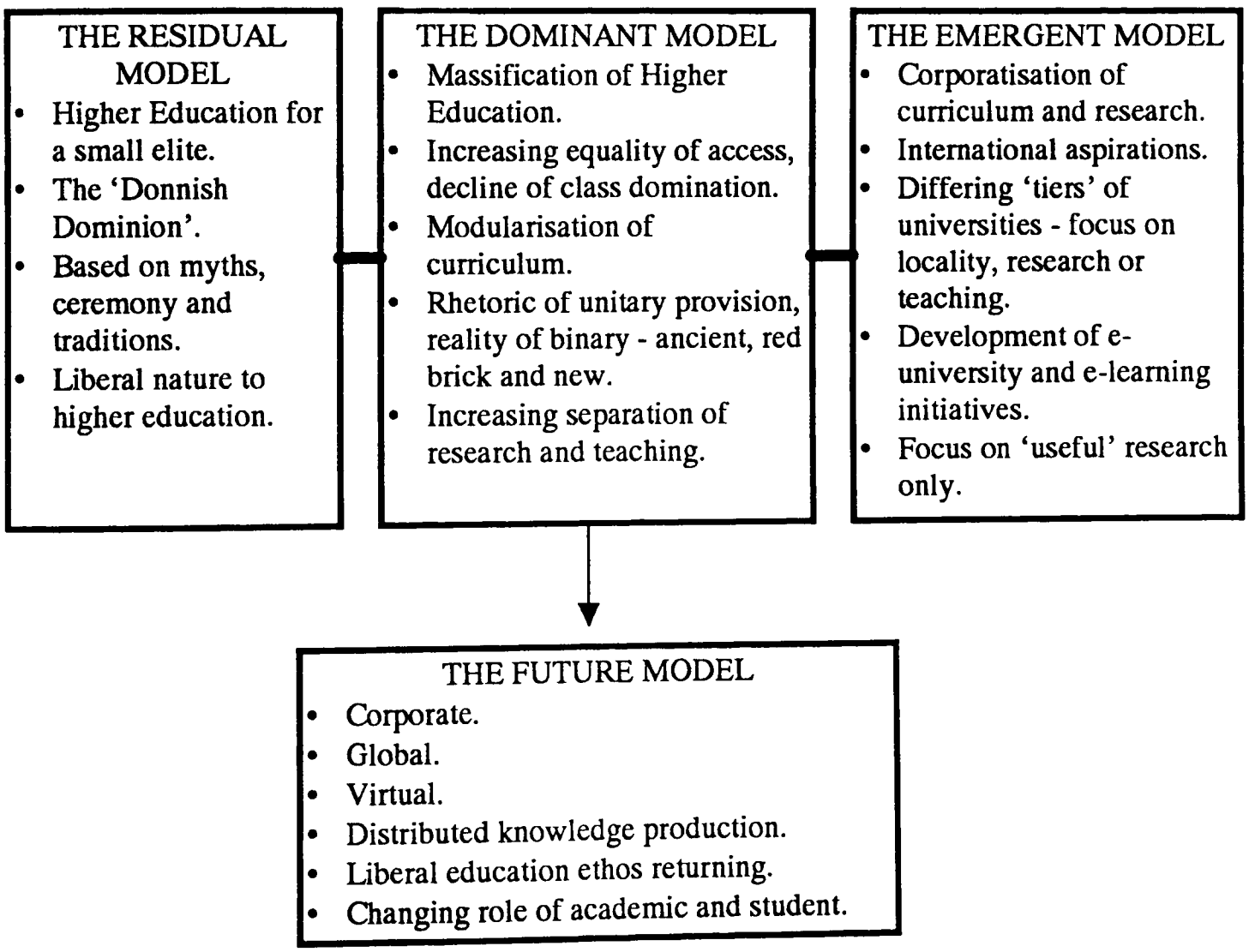

Figure 8.1. Mapping the models of the university.

The model raises many issues for further research. Firstly, there is the evidence that the future models presented here are actually occurring. There are the issues of management of higher education institutions and the changing nature and role of the university as a political institution. Perhaps the most concerning areas in need of further research are the implications of the virtual developments (in particular) on the students' well-being.

In terms of what we should be looking for in order to evidence this future model, there are many sources to be investigated. The corporate university is an area where little research has been conducted, yet this does not appear to be from lack of openness on the part of the corporations. The virtual university is appearing already on the web, its continued development needs to be monitored. The global university will depend somewhat on the spread of digitalisation to allow the virtual university to extend its spread. The extent to which the three will merge or remain mutually exclusive is also an area for investigation. The global university is somewhat dependent on the virtual university but this relationship need not be reciprocal. The corporate university may or may not take virtual embodiment, and the extent of its globalisation will be dependent on the nature of its ownership. Alongside these developments is the need to map the continuation of the current provision, both in terms of its residual and dominant discourses, as well as the emergent model.

When you consider that three quarters of the universities in Britain are less than four decades old (Scott, 1995), the rate of change within the sector has been phenomenal, and it will continue to be so.

> In the family the new generations succeed the old, but they continue to bear the family name. So too with the university. (Barnett, 2000:12)

This thesis presents one possible future. It is not intended to be the final picture or solution, but merely the start of the debate. Unless the university sector addresses its future it will continue down the emergent model and institutionalise the elements of commodification,

exclusivity and corporatisation. This thesis is presented to start the democratic process of discussion, and to challenge the sector to take control of its future.

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British Aerospace - http://www.bae.co.uk

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