E-learning and Technical Change in Universities: A Comparative Case Study of Japanese and Scottish Higher Education

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DECLARATION

THIS THESIS IS MY OWN WORK AND NO PART OF IT HAS BEEN SUBMITTED FOR A DEGREE AT THIS, OR ANY OTHER, UNIVERSITY.

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Abstract

Universities are in a process of transformation. Globalisation has heightened the competitive pressures on them and Information Communications Technologies (ICTs) seem to be important elements of their ability to respond to these circumstances. The current rhetoric of e-learning within universities reflects these pressures and conveys a sense that this represents a necessary and inevitable future for higher education. However, ‘e-learning’ is a highly ambiguous term which encompasses a range of activities and technological forms. Globalisation is also generating new conditions which universities have to address. This thesis seeks to explore the implications of these changes for universities. It examines whether technological change and globalisation are leading to convergence or some uniformity in developments, as many writers have suggested. Alternatively, are the outcomes and the response of universities contingent on the specific social, cultural context and history of individual universities in their different sectoral and national settings? Theoretically, the thesis draws on ‘the social shaping of technology’ which sees technology as the product of social, political and cultural negotiations among various social groups such as innovators, policy makers, academics and other relevant parties, and this approach takes into account the agency of local actors in the context of wider structural forces.

Empirically the focus is on the processes of development and deployment of ICTs within universities, particularly in relation to teaching and learning in the globalising information age and it seeks to examine a number of questions:

- What kinds of roles do ICTs play in the development of e-learning? Are they the determinant factors or contingent?
- What choices in relation to e-learning are open to universities in the context of globalising capitalism?
- How do national and institutional cultures influence ways of developing e-learning within universities?
- What kinds of outcomes do top-down and bottom-up approaches towards e-learning bring about?

The study aims to understand how universities operate as a key social institution in the emerging context of the knowledge society. In order to address the above questions, a comparative case study approach was adopted. It examines the micro-processes of change in four universities – two in Scotland and two in Japan. The four universities have been selected because they can provide us with the inter-national and intra-sectoral comparison, and can highlight differences as well as similarities amongst them. In Japan there is one ‘private’ university and the other is ‘state’ controlled. In Scotland the selection is of an ‘old’ university and the other a ‘new’ university. Together they offer very different institutional and cultural contexts for studying the influences that shape the role of ICTs in higher education.

The fieldwork for this thesis took place between 2001 and 2004 and the material gathered reflects processes occurring in this time period. The findings support the argument that institutional histories, cultures and aspirations of academic units and individuals also play a role in shaping the pattern of development and deployment of ICTs. It is the case that the broader context of globalisation is having a distinctive influence on the scope for choice universities are making, however, it has not made such choices irrelevant or impossible. Cultural values and pedagogic interests cannot be ignored in the process of developing and deploying ICTs since they have a significant impact. Also national cultural characteristics determine what kind of approaches towards e-learning institutions develop. The thesis claims that seemingly uniform conditions are, in fact, leading towards sharply contrasting outcomes. In this process ICTs play a distinctive role by facilitating universities to operate nationally as well as globally. However, it is more important to note that their actual deployments are shaped by the agency of academics within the micro-processes of change particular to the context in which they work.
Dedicated to my father
(1930-1992)
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Part One

Introduction and Approach
Chapter One

Introduction

Universities are in a process of major transformation. Information and communications technologies (ICTs) seem to be important aspects of their ability to respond to new competitive circumstances that exist nationally and internationally. The current rhetoric of e-learning within universities reflects these pressures and conveys a sense that this represents a necessary and inevitable future for higher education (Clegg, et al., 2003). However, ‘e-learning’ is an ambiguous term which can be understood in different ways. Predominantly the emphasis in much of the literature is on their benefits in terms of the technical capacity of new technologies to develop effective teaching and learning environments. What this particular focus often overlooks is the context in which technologies are deployed. By situating technologies in specific contexts their role as social and cultural artifacts which mediate different interests is more apparent. Technologies are not simply neutral and practical instruments for shaping learning. The choice of which technologies are used, for what purpose, reflect complex relationships and processes in the context of wider institutional and societal values (Pelletier, 2005). It is this approach to e-learning that is taken in this account.

This thesis explores the processes of developing e-learning in higher education. In particular, it examines how the development and implementation of technologies are shaped by the institutional and national context of its application. It examines whether technological change is leading to convergence or some uniformity in developments which might be expected if technologies were independent of social and cultural processes. Alternatively, the perspective developed in this account is that the response of universities is largely contingent on the specific social, cultural context and history of individual universities in their different sectoral and national settings. Theoretically, the thesis draws on ‘the social shaping of technology’ which sees technology as the product
of social, political and cultural negotiations among various social groups such as innovators, policy makers, academics and other relevant parties, and this approach takes into account the agency of local actors in the context of wider structural forces (McKenzie and Wajcman, 1999[85]; Williams and Edge, 1996).

This study aims to understand how the university operates as a key social institution in the emerging context of the 'information society'. The thesis examines the micro-processes of change in four universities – two in Scotland and two in Japan. These universities have been selected because they can provide us with the inter-national and intra-sectoral comparison, and can highlight differences as well as similarities amongst them. In Japan there is one 'private' university and the other is 'state' controlled. In Scotland the selection is of an ‘old’ university and the other is a ‘new’ university. Together they offer very different institutional and cultural contexts for studying the influences that shape the role of ICTs in higher education.

What is examined through the cross-cultural comparisons is whether universities carry historical, cultural and social continuity even in the processes of developing e-learning. There has been much work which addresses the crisis of the university in the contemporary society, for instance, one well-known argument is Reading’s, (1996) ‘the end of university’. That is, the university has lost the functions, the values and beliefs inherited from modern industrial society in the contemporary context. Coinciding with the emergence of post-industrial or information society theories, there has been a claim that the emergence of a new kind of society is causing major social transformation which is also being witnessed in the university (Poster, 1990). The question is – to what extent does this claim reflect the facts? The study takes this question as its starting point. It is true that there have been significant changes in every aspect of society, but it does not mean that all institutional routines have been demolished. The university is a 'resilient institution', as Delanty claims:
By locating the university in the context of major shifts in modernity, we are in a better position to understand the current situation. While recent developments clearly do undermine many of the traditional functions of the university, it is important to see that the university is a resilient institution that has been formed in a continuous process of change (Delanty, 2002: 44).

Even if society has shifted into a new era, there remains an inflection of historical and cultural continuity in certain practices, values and beliefs that are enduring and important. This position is taken to examine the development of e-learning in different institutions located in different countries in order to see how institutional as well as national cultures can influence the development of e-learning.

The wider context

In the UK Tony Blair, the Prime Minister, famously stated ‘education is the best policy we have for the economy’ (DfEE, 1998: 9). The connections between education and the economy are close ones but have been brought even closer together with the rediscovery of the concepts of the post-industrial society/information society (Bell, 1973) and knowledge worker (Drucker, 1968) and the argument that education is an important factor, along with capital and labour, in wealth production (Machlup, 1975). The World Information Report (UNESCO, 1998: 2) defines the information society as the society ‘in which information is used intensively as an aspect of economic, social, cultural and political life’. This report specifies that ‘an information society comes from long-term economic development and technical change’. In spite of the fact that the information society consists of different intertwined sectors, the main focus has been the influence of global capitalism. Therefore, it is understandable that much research on the application of ICTs to work/occupation-related or economy related arenas has been at the mainstream of information society studies.

While the above-mentioned definition of the ‘information society’ claims a link between ICTs and economic development, there is ambiguity around the distinction between
information and knowledge. Some theorists of the information society use the term interchangeably with that of the ‘knowledge society’ (Bell, 1974) or ‘knowledge economy’ (Drucker, 1968). Among these classic information society theorists, higher education has always been one of the core sectors for analysis. Through ICTs, the nature of knowledge has significantly changed and the extra emphasis has been placed on knowledge production/dissemination in the information age. This increasing importance of knowledge has to be carefully considered in conjunction with the spread of ICTs. They have greatly contributed to the dissemination of information as well as knowledge but this has also prevented universities from monopolising knowledge as Gergen (2001: 117-118) claims, the ‘demise of individual possession of knowledge’ and the end of university as an ‘ivory tower’. This means that schools and universities are losing their monopoly in the creation and transmission of knowledge.

This study aims to understand how universities operate as a key social institution in the emerging context of the information society. To examine the uptake of ICTs for teaching and learning at the university, we have to carefully consider how historical continuity, social and educational practices, and cultural values in each society interact with technology advances to shape the forms of e-learning within the framework of individual educational institutions. In terms of e-learning, universities have adopted a range of technological forms - from partial use of virtual learning environments (VLEs) or resource-based learning to full Web-based learning such as a virtual university. What is important is the usage of ICTs for teaching and learning is not standardised. In fact as this study will indicate heterogeneity is the norm.

What is unique about ICTs is the integration of micro-computers and telecommunication technologies. For example, Baer (1978) argues that it is not computers in themselves that are crucial, but the ability to network computers and to extend communications on a wider scale that is the key issue. In other words, without telecommunication’s development, computers could not have given birth to what has been labeled the
information society. The computer 'has made the activities such as the collection, storing, retrieving, processing and generally moving around of great variety of information possible across borders, and telecommunication systems have made the transporting of information possible on the global scale' (Howlett, 1978: 1).

One way the above occurs is that ICTs challenge the conventional concept of time-space. In the past, societies were primarily space-bound or time-bound in that they were 'held together by territorially based political bureaucratic authority and/or by history and tradition' (Kumar, 1995: 10). However, the computer's link with new communications technology has introduced a radical new space-time framework in modern society. In pre-modern societies space and place largely corresponded. For example, in small traditional communities time is not separated from the substance of activities, and social relations are conducted on the basis of kinship relations and tradition. Time is still connected with space (and place) in this context. However, ICTs have changed this because they separate time from space.

In the writings of some social theorists the tempo-spatial implications of new technologies are claimed to be transforming the world around us. For Giddens 'time-space distanciation' (1990: 14) involves reconfiguring social space, which is no longer bounded by places, distances and borders between countries. In pre-modern society spatial dimensions were dominated by 'presence', by localised activities, however, in modern society those who are absent may also fundamentally shape what takes place in a given situation. Under this condition, the 'emptying' of time and space occurs and the dislocation of space from place follows. As a result, 'time and space are organized so as to connect presence and absence' (1990: 14). In this new context, Giddens' (1990) argues people's activities and events are lifted out from local situations and are restructured across time and space. As a result, he claims our lives become more universal and less embedded in particular locales.
From a Marxist perspective, Harvey (1990) also captures the impact of changes in communications and technologies as producing another round of 'time-space compression' in the relentless pursuit of capital accumulation. The removal of spatial barriers through technological innovation such as the railroad, the telegraph, telephone airplanes and media such as radio and television annihilates the constraints of space. The world is shrinking in the sense that the time taken to traverse different spaces, and places, is reduced. New information and communication technologies accentuate this process.

Both above theorists' arguments on the role of information technologies arguably overstate the significance of broad processes of change by downplaying the importance of locality or the relationship between place, space and cultural influences. They do not give sufficient space to the range of choices individuals and institutions have in responding to changing circumstances. This is of particular importance in studying e-learning in higher education which is also occurring in this wider context.

**Statement of the problem**

It often seems that the technological debate in higher education is polarized into positive or negative assessments of the impact of ICTs for the institution and teaching and learning practices. This dichotomy, however, fails to capture the complexity of the process of development. Therefore, it is essential to look at what actually happens on the ground through empirical study.

Whilst there have been various texts which address the changes universities are facing, most of them are not based on direct empirical evidence (see Peters, 1998; Scott, 1984, 1995, 1998; Barnett, 1994, 1997; 2000; Reading, 1996). There are, of course some empirical accounts of the uptake of ICTs at university. However, these tend to focus on the assessment of certain individual projects, studies of pedagogical activities, or address the feedback of student experiences (Hara and Kling, 2000). It is only very recently that studies have begun to analyse e-learning from a wider socio-technological perspectives
supported by detailed empirical data (Robins and Webster, 2002; Cornford and Pollock, 2003; Woolgar, 2002). This thesis aligns itself with this body of work and seeks to understand the process of developing and deploying ICTs from a similar theoretical perspective.

Universities are interesting places to study the process of developing and deploying ICTs for e-learning. On the one hand, they are centres for the production of knowledge and understanding and in this sense are potentially at the cutting edge of change and development. On the other hand, they are represented as rather traditional institutions which have been concerned with the preservation of culture and particularly an elite culture. It would seem, therefore, that the deployment of ICTs in the context of universities is potentially contradictory. The university has also been one of the most ICTs-embedded institutions in society, heavily investing in ICTs much earlier than many other organisations. For example, the first academic network infrastructure funded by the UK government, the Joint Academic NETwork (JANET) was created in 1984 to serve around 50 sites and by the late 1980s around 200 academic sites were connected. Following this, SuperJANET based on optical fibres was developed in 1992. SuperJANETII, II was then further developed. In the meantime, there was a Scottish Extension to SuperJANET to provide replacement links for the Scottish Interconnect. Apart from the technological infrastructure, universities have been in the forefront of developments in ICT related areas of informatics and artificial intelligence. Thus, universities have been ICTs-intensive institutions at least for the past decade and more.

ICTs may challenge some of the certainties of university culture and practices whilst at the same time creating opportunities for them to retain their central role in the development of new knowledge and understanding. In addition, the growth of the so-called ‘knowledge society’ has placed education, and higher education in particular, at the centre of debates and policy in relation to this development. ICTs are seen to have a key role to play in this new context, particularly in the developed economies of the
world. These forces are having an impact on the future direction of change for universities which the burgeoning literature in this area is a testimony (for example, Barnett, 2000; Reading, 1996). The process of technological innovation is becoming a significant part of this trend which this study seeks to cast light on.

Although technological advances are occurring, it is difficult to predict to what extent a particular technology advance will be deployed. The ‘technological determinist thesis’ would locate the issue in terms of the properties of the technology itself in that their inherent potential is taken to be the decisive factor. However, this view obscures rather than illuminates the process of change. There are factors intertwined with the technology such as social values, economic factors, information infrastructure, or even unexpected incidents which influence the process whereby technologies are taken up in the wider society. An alternative view to this might be characterised as the ‘globalisation thesis’. In this view the deployment of ICTs is part of a competitive struggle between societies and also within them between groups with competing interests. In the context of global capitalism, the contribution of ICTs to profit making would be seen as the decisive issue. The successful competitors are those who deploy ICTs quickly and efficiently and the inevitable outcome of this process is the widespread diffusion of these technologies. The difficulty with this view is that its explanatory potential is largely at the macro-level of analysis. Moreover, it may not be as appropriate in the context of universities which – despite increasing pressures to adopt a market orientation – are not merely about making money and generating profits. In order to obtain a more accurate picture of how certain technologies are developed, shaped and implemented within the university setting, empirical research is essential. Furthermore, the analysis must be conducted from a broader perspective since technology is a social product in that it is not merely progress through improvement and innovation from one technology to another, but rather an ongoing interaction between the technology and its symbolic or social meaning and use (Mumford, 1971).
A further difficulty with globalisation theories of higher education is that local diversity is ignored in the macro discourse. As a corrective to this omission, this study takes a position of ‘glocalisation’ which Robertson (1992, 1995) advocates because it focuses on how cultural factors influence the process of globalisation. His argument acknowledges the broad influence of the ‘global’ over the ‘local’, however, Robertson advocates that there is a need to look at interpreting processes between the two as they create more distinctive cultural diversity rather than homogenisation. Each society contains diverse local cultures and institutional/organisational cultures which cannot be simply dismissed or ignored as irrelevant no matter how advanced ICTs are and no matter how fast globalisation is changing things. With this ‘glocalisation’ perspective in mind, this study focuses on how individual universities interpret globalisation and respond to it with, or without, the help of ICTs. In doing this, local institutional culture as well as the wider national culture is an important factor in the analysis.

The term ‘e-learning’ is also problematic. It can refer to a wide range of teaching and learning activities which use ICTs that are simple or highly complex. The ambiguous nature of e-learning is amplified by looking at patterns of use on a global scale. It is important to see whether there is a global pattern to technological change in the development of e-learning. In reality, it seems that the developmental process of e-learning is far from unitary and in fact, it is very complicated. In order to examine this complexity, it is also essential to look at university governance influences the ways of deploying e-learning, since university governance and management systems are of particular importance in that they shape an individual university’s culture and approach to e-learning.

No matter what kind of category the universities are placed in – new, old, traditional, progressive, private or state universities, they are involved in processes of change along with external changes influenced by the social, economic and political context in a globalised world. Universities are also going through uncertainty in terms of finance,
funding, management, and so on. These uncertainties are reflected in the ways of developing and implementing e-learning within each institution. Institutionally, different responses to these uncertainties have led to the generation of a great diversity of models. Some universities may take this transitional moment as an opportunity to recreate their own new institutional identity with the help of ICTs – transforming them into a hybrid innovative institution or even virtual university, and some may be more wary of developing and implementing e-learning as a subsidiary part of their course provision. To think that technology is the major driving force to transform conventional education approaches inherited from pre-modern and modern times is oversimplifying the current situation regarding e-learning. Technology is only one of the forces changing the educational landscape and sometimes its influence can be fairly minor. It should be remembered that e-learning carries historical and cultural continuity in the processes of its development and in its implementation, although the continuity ‘may be reshaped by the use and deployment of ICTs’ (May, 2002: 10).

Theoretical resources and research questions
This study adopts a socio-technical perspective, in particular, a social shaping of technology (SST) approach, which provides a more complex picture of the micro-politics of the development and implementation of technologies at an organisational level. In this approach technology is conceptualised as the product of social, political, and cultural negotiations among innovators, policymakers, and social groups (Bijker, Hughes and Pinch, 1987; Biker, 1995; MacKenzie and Wajcman, 1985; Williams, 1997). SST emerged by negating the technological determinism which was predominant in the mid-1980s and it has been gaining recognition as a powerful analytical tool in the study of technology in recent years. This approach is useful since both education and technology take place within a socio-cultural context and involves the agency of local actors in the context of wider structural forces. This thesis focuses on the processes of development and deployment of ICTs within universities, particularly in relation to teaching and learning in the globalising information age.
The following research questions inform the study.

I. What kinds of roles do ICTs play in the development of e-learning? Are they the determinant variable or contingent upon other factors?

In the literature on the contemporary society in the information age, ‘being networked’ or ‘connected’ via ICTs is believed to be an indispensable means for organisations to thrive in this competitive global economic world. Does this also apply to a higher education context? Are universities being transformed as a result of ICTs? In particular, e-learning is seen as a driving force for the commercialisation of higher education (Noble, 2002) - but is it the case? The reality of higher education seems to be very complex in that the nature of these organisations cannot be simply understood in terms of profits. It is essential to capture the diversity of universities, their different forms of e-learning and how and why they are used. Also, universities reflect local and national cultures to some extent and on-campus based universities are still embedded into their local context. There are claims that ICTs emancipate organisations from physical proximity, but do ICTs allow universities to transcend or cut off their geographical constraints through e-learning?

II. What choices in relation to e-learning are open to universities in the context of globalising capitalism?

Globalisation is a contested term with different accounts of its meaning. For instance, Giddens (1990) claims globalising processes have universalising effects, but to what extent is his argument true? There are problems arising out of his tendency to speak about the experience of modernity in the singular, rather than highlighting a plurality of historical or material circumstances in global culture. He does recognise that modernity ‘produces difference, exclusion and marginalisation’ (Giddens, 1990: 6). He may be quite correct when asserting that, in many respects, we inhabit a single social world – and media technologies have made a significant contribution to the transnationalising
process. Yet depending on exactly where ‘we’ are placed in relations of class, gender, generation and ethnicity – or in time-space geographies – there will be widely varying experiences of mediation and globalisation.

One of the alleged consequences of globalisation is an increasing homogenisation of culture. In certain respects, then, it could be argued that the world has become a less diverse and almost ‘placeless space’ in which to live. From this perspective, local differences are seen to be gradually eroded over time as much the same range of products and services is consumed in various parts of the impact of ‘cultural imperialism’ (see Tomlinson, 1991). Such a view is valuable in highlighting the power of the west over the rest in the workings of the global economy – but this view fails to recognise the continuing plurality or heterogeneity of many local cultures. As Moores (2000: 119) argues, ‘the significance of the local is not necessarily diminished by the large-scale processes of the global’.

The debate regarding the local experience vs. global influence brings us to the issue of the over-generalized perception of the consequence of globalization through ICTs. Green (2002) argues that a variety of case studies across time, space and culture have been chosen to illustrate elements of the debate over technology and society. There is a tendency to encompass the developed countries within the framework of the west. She states that:

There is nothing uniformly ‘western’ about all richer countries. Rich countries include Australia and Japan, although these nations might be more conventionally seen from the vantage point of the Anglo-American English-language hegemony as ‘South’ or ‘East’ (Green, 2002: xxvi).

In the case of Japan, the country is still marked as one of the most important countries in discussing the information society mainly in the light of technology and economy. Castells (1996) illustrates how countries like Japan and Germany maintain high degree
of manufacturing industries to refute the typical ‘from manufacturing to service industry’ information society. Although Castells presents the influence of cultural and historical diversity over the ways of restructuring societies, it is not specified to what extent cultural and historical continuity have been influencing the ways of forming the ‘network society’ or ‘network organisations’. However, in the case of Japan, its modernisation has taken a very different path from that of western countries. This difference has had a unique influence over the processes of the realisation of the information society and over the use of technology in aspects of daily life.

III. How do national and institutional cultures influence ways of developing e-learning within universities?

‘Culture’ is one of the key variables which influence the ways of developing e-learning at individual universities. Culture, in fact, entails a range of meanings and can be loosely summarized as the complex of values, customs, beliefs and practices which constitute the way of life of a specific group (Eagleton, 2000). Also, culture can serve as systems of shared symbols and meaning (Geerts, 1973). This study examines how national and institutional cultures can influence the ways of developing e-learning at university. The examination is essentially two-fold: 1) analysing institutions within the countries to see how institutional/individual academic culture can create the diversity of e-learning within the same society but in different local settings and 2) comparing the findings drawn from the initial analysis to see how national culture influence the shaping of e-learning in certain national settings.

IV. What kinds of outcomes do different strategic context and strategies (for example contrasting top-down and bottom-up managerial approaches) have for the development of e-learning?

Parallel to institutional and cultural practices, managerial practices are also a central argument of this study and such practices have been in a process of change in the context of globalisation. Whilst the study does not focus in detail on systems of governance it
does utilise the basic distinction between a top-down and a bottom-up approach to e-learning initiatives. By the former is meant policy directives which originate from senior management or from government directives outside universities. The latter refers to a more mixed range of activities that are grounded in academics’ experiences, interests and concerns for teaching and learning. Both approaches have their merits and limits. The interesting issue is what are the consequences and implications for e-learning when the initiative arises out of either of these approaches or through some combination of bottom-up and top-down developments.

**Methodology**

In order to address the above questions, a comparative case study approach was adopted at two levels. The first involves an inter-societal comparison between Scotland and Japan. The second takes an intra-sectoral comparison between ‘old’ and ‘new’ universities in Scotland and private and public universities in the Japanese context. The cross-national comparison helps to examine the micro-processes of change in four universities as well as capture the broader issues of change. Investigating e-learning within each country involves analysing the structure of the society in which educational institutions providing e-learning are located. However, in the process of analysing ‘society’, it should be remembered that to employ the idea of a ‘society’ might ignore or stifle the differences that exist within it (May, 2001). Recognition of these differences within as well as between each society leads to a more accurate picture of the interrelation between higher education, technology and society. In particular, in this globalising world, comparing peculiarities of local experiences of e-learning in each country is useful for understanding the actual influence of globalisation over higher education.

The institutions I examined are – 1) the University of Edinburgh (UoE), which is an old traditional University, taking a bottom-up approach to e-learning without having a university strategy; 2) Robert Gordon University (RGU) in Aberdeen, which has strict
top-down management approach based on university wide strategies for development of
e-learning; 3) Waseda University, which is a large prestigious private institute in Japan
with very well-planned university strategies regarding online learning and taking a top-
down approach; 4) Kyoto University, which is one of the top national universities in
Japan and has been under the influence of the government in many respects but does not
have a university strategy.

The fieldwork for this thesis took place between 2001 and 2004 and the material
gathered reflects processes occurring in this time period. The four case studies illustrate
how differently the two nations interpret the concept of e-learning as well as how
differently they envisage the ideal relationship between university education and ICTs.
Institutional culture is particularly important in that it actually determines what kind of
approaches towards e-learning institutions develop. In addition to this, I discuss how
academic autonomy can be maintained if the university uses top-down management to
integrate its departments and faculties, making a comparison with the institutions which
use the bottom-up approach without any guiding e-learning strategies. In the end, I am
hoping that these observations will draw our attention to the problematic nature of ICTs
in creating networked universities. In addition, the detailed case studies throw light on
the complex, negotiated and changing features of e-learning and the various external
factors which impact on their development. Different people are involved in the
developmental stages of e-learning. They contribute to the process of negotiation which
gives meaning to the way technologies are deployed and used. Through my interviews, I
decode the type of rationale encoded in the practiced form of online learning in each
case. In the process, I will refer to the structural dichotomy between function and social
meaning that e-learning carries. That is, e-learning can be a pragmatic tool to facilitate
teaching and learning and at the same time, it carries a symbolic meaning which enables
universities to create new institutional identities which satisfy the requirements of the
information age.
The case study approach is suitable for exploratory examination but has weakness in generalisation (see Chapter four for more details). In order to maximise the effectiveness of case studies, testing theoretical propositions is a useful way forward. The following section identifies the research questions which are the focus of the four case studies.

**e-Learning in British and Japanese Contexts**

Education is seen as an indispensable prerequisite to national development in the UK as well as in Japan. In the past decades, the two countries, in their own ways, have experienced several radical changes in higher education. This is also a global phenomenon. As for Japan, it is generally considered a ‘high-tech’ country and has been successful in applying technology to business/industries, but not, however, in the field of educational. Until very recently, Japan did not have much experience of introducing ICTs to education, especially in higher education. However, since the late 1990s the interference of the government in university education has been dramatically revised, which has opened a new era for e-learning. Traditionally government intervention in the affairs of universities has been strong, and directly or indirectly they have imposed restrictions on the choice of technologies for e-learning. For example, the Ministry of Education, Sport and Science ruled that e-learning had to create similar interactive effects as face-to-face communication brings about. After the slow, but steady series of deregulation in e-learning in higher education after 1998, it started to be promoted more rapidly but still in limited forms of technological development. Consequently, most universities ended up taking real-time lectures (on-demand lectures in some cases) with a huge screen set in a lecture room via a video-conferencing system, although there are cases in which highly sophisticated forms of e-learning are witnessed in private universities.

Behind the scene of deregulation regarding e-learning in higher education, there is a sober reality in terms of the globalisation of education and the tough management of universities. Japanese universities are in ‘over-supply’ compared with the declining
number of potential students entering universities. The market for universities, particularly private ones, is becoming more and more competitive. Furthermore, the prolonged recession has significantly influenced the employment structure. Traditional lifelong employment and seniority systems have collapsed through the bankruptcy of domestic companies and the merger with foreign companies or other domestic companies. Consequently, universities in Japan are forced to produce graduates with high skills in IT and adjustability to the rapidly changing working environment. Reflecting these uncertain circumstances, the Koizumi government (2001- ) has pronounced a new IT related policy called, ‘e-Japan’, in which the uptake of ICTs into the educational domain is one of their top priorities and restructuring of all national/public universities including mergers among universities to bring about efficiency in funding is one of the key goals. In fact, the incorporation of state universities was introduced from April 2004 and this is expected to bring about significant changes in terms of their management and funding. Reflecting these distinctively different settings, state and private universities, the take up of ICTs vary significantly between the two sectors.

Meanwhile, the UK has experienced dramatic shifts in higher education. One of the major changes of university education is the shift from elitist to a mass education system, when Further and Higher Education Act (1992) was issued. As a result, the number of universities has dramatically increased since then and the opportunities for university education have become more abundant. Still some traditional universities such as Oxford and Cambridge have managed to maintain some aspects of the elitist culture. However, the abundance of universities and the diversity of institutional cultures mean that most universities have ultimately been influenced by funding matters and have been forced to become more market oriented and competitive (Jarvis, 2001). As a result, the claim that education has become a commodity to be sold in the marketplace of learning has emerged (Shumar, 1997).
The tendency towards the commodification of higher education may also be witnessed in the boom of e-learning in higher education in the UK. However, this needs careful attention as well. For example, as one of the biggest projects, ‘e-University’ was initiated in October 2000, funded by the Higher Education Funding Council for England as a business model for a new way of delivering the best of British higher education to students around the world via the internet. However, ultimately, this project did not take off despite four years of effort. According to the article ‘E is for error’ (Guardian Education Supplement, 8th June 2004), the failure may be attributed to multiple reasons such as the lack of focus on the initiatives, excessive optimism, the lack of proper marketing, taking risks in outsourcing a customised platform for e-University, etc. What this example shows us is the complication of the development of e-learning in higher education. The developmental paths of e-learning are not unitary and there are a range of reasons for universities to address it. For example, some may think that they can open up their student market with ICTs. Or some enthusiastic academics may be keen on innovation in teaching via ICTs. However, these diverse interests and motives are often made light of in the process of developing a wider range of e-learning initiatives.

Technologically speaking, the UK is also unique in that it has profound experience in the introduction of electronic media including ICTs in higher education – the UK has a world-leading national institution, the Open University, in this area - and in creating educational software such as CD-ROMs at higher education level. This background has certainly influenced the current development of online learning at British Universities. For example, in the UK, online learning often means teaching/learning using a variety of technological modes – resource-based learning using multimedia CD-ROMs, computer/video-conferencing systems, chat-room, e-mail, web based training, etc. What is worthwhile noting about online learning in the UK is that, in general, people rely heavily on text-based communication via ICTs rather than screen mediated face-to-face interaction using video-conferencing, which is very popular in Japan.
Organisation of the Thesis

Investigating e-learning is rather a complicated task since it requires interdisciplinary work crossing academic boundaries covering the study of technology discourse, pedagogical issues of e-learning, policy discourse, cultural studies and organisational management. Furthermore, the nature of ICTs, which have never been technologically stabilised, adds an extra complexity to the study. This account, however, seeks to untangle this complexity by examining e-learning from a number of perspectives, including higher education, economy, politics, culture and technology within the framework of the global information age.

The ten chapters of this thesis are interrelated but explore diverse themes. In order to present how each theme links to the analysis of the deployment of e-learning at universities in different settings, a wide range of literature is reviewed in Chapter two. The literature review chapter focuses on historical trends in the analysis and understanding of post-industrial or information society theories. It includes a critical assessment of the network society as developed by Castells and argues the necessity to develop micro-empirical studies of change which draw on the social shaping of technology as theoretical resources.

In Chapter three, the focus is on literature addressing the changing context of higher education. By looking at the wider, external pressure universities are facing, the chapter examines the background to the relationship between universities and ICTs, in the information age. Following this, the policy discourse in Japan and the UK are briefly reviewed.

Chapter four describes the research design and the methodology of this study. After explaining the rationale for adopting cross-cultural comparative case studies for the study, I refer to the justification of the approach to data collection, the selection of the
four case studies and the use of semi-structured in-depth interviews and extensive secondary research. The limitations of the study are addressed.

Chapters: five, six, seven, and eight are devoted to case studies with regard to the current situation of e-learning at universities in Japan and Scotland. Chapters five and six examine Japanese universities; Japan has quite distinctive differences between institutional culture in terms of their management between the state and private sectors. Chapter five focuses on the state sector, Kyoto University, which is the main user of satellite based space collaborative systems (SCS), developed by the government to realise the vision of ‘networked universities’ amongst higher education institutions using the same technological infrastructure. The chapter looks at how the state-led project was accepted, rejected and reshaped by academics across the university, while it depicts how new use of SCS and other forms of e-learning were introduced over time.

Chapter six looks at the private Waseda University. Unlike the state sector, the funding from the government is very limited and the infrastructure of SCS is not provided free. Waseda University describes the development of e-learning under an ambitious consortium project linking private sector companies and other universities. The well-planned university e-learning strategy devolves autonomy and responsibility to individual academic units to establish new forms of partnerships with other universities as well as large private corporations. This process has created a good degree of flexibility which has enabled academics to explore different forms of e-learning which suite their pedagogical needs and satisfy the interests of sponsors in the consortium. However, the pattern of development is uneven across the university and this has to be explained by the interest of consortium partners in specific academic areas – primarily those which are commercially viable. This is also true for those academic units which can fit into the university’s vision regarding globalisation and develop a certain form of e-learning while others cannot. The chapter focus on the emerging diversity of forms of
e-learning and unevenness of e-learning across the institution as a result of institutional purposes and competitive pressures in a competitive market.

As for the case studies in Scotland, the comparison is made between a traditional, research-oriented university, the University of Edinburgh and a new, innovative, more teaching-oriented university, Robert Gordon University. Chapter seven looks at the case of University of Edinburgh (UoE) which is in a transitional moment from bottom-up to more top-down approach regarding the uptake of e-learning across the institution. The pattern of development of e-learning at the UoE has been uneven with some highly sophisticated and widespread use of e-learning in certain academic sectors, isolated examples of development in others and nothing in other areas. Their institutional culture is ‘research-led’ with academics enjoying a high degree of autonomy. This internal environment allows academics to explore e-learning for their own interests and goal but without institutionalised incentives. This may be beneficial from a pedagogical perspective, but these bottom-up projects are small scale and remain academically localised and can be inefficient in terms of resource and labour across the institution. However, the introduction of top-down led strategy regarding e-learning is slow in changing the current situation. The chapter highlights difficulties and the problematic issue of implementing institution-wide e-learning initiatives at an ‘old’ university with only prior experience of fragmented e-learning development.

Chapter eight examines Robert Gordon University (RGU) as an example of a ‘new’ and vocationally-oriented university with a vigorous commitment to e-learning. The development of e-learning is seen to be highly important as a means to reach the global as well as national market for students. By introducing a university e-learning strategy, RGU effectively adopted a top-down approach for on-campus as well as distance learning. Their approach has been successful in launching more e-learning courses for distance learners while diffusing certain VLEs across the institution for on-campus study. A top-down approach to the implementation of institution-wide e-learning is
effective in terms of management but can also be problematic. This becomes even more obvious when the institution attempts to standardise the existing VLEs systems. The chapter shows the standardisation of the systems creates tensions between pedagogical concerns, technologies and management interests in institutional efficiency.

Four very different case studies which, taken together, provide insights into the diversity and richness of institutional cultures, patterns of governance, forms of e-learning and distinctly different processes of change. Whilst all of these cases have to be situated in a similar context of global change and competition we see in the patterns of development and deployment of ICTs distinctly divergent outcomes and issues. This underlines the fact that whilst there are similar pressures for change the choices and courses of development and deployment in e-learning in higher education are likely to be highly dissimilar.

Chapter nine is an analytical chapter which examines and synthesises the pattern of change highlighted in the case study chapters. First, a comparison within each country is made to identify the similarities and differences between them. Differences are interpreted as the embodiment of institutional cultures while similarities are identified as aspects of national culture characteristics over the development of e-learning. After conducting the intra-sectoral comparison within each country, the analysis is brought to the second phase, the cross-national comparison. The term, e-learning, entails various technologies but certain preferences in the choice of technological forms for e-learning are witnessed between the two countries. This chapter attempts to interpret the particular preferences over the technological forms from educational, cultural and social perspectives.

In the final chapter, I draw conclusions on the process of shaping e-learning at university by going back to the research questions, the literature review, the findings of my empirical study and the analysis from the study and synthesising relevant points.
Furthermore, some reflexive thoughts on the methodology I have used to study the development of e-learning are identified and discussed.
Chapter Two

Theoretical resources: a literature review

Introduction
The purpose of this chapter is to review three broad intellectual discourses which have influenced our understanding of the relationship between technologies and social change. It begins with a consideration of post-industrial society and futurist ways of thinking, followed by a review of network logic developed by Manuel Castells and ends with three distinct social constructivist positions. The main function of this study is to examine the extent to which network logic offers a convincing explanation of the processes of change in relation to the use of ICTs in teaching and learning in higher education. Therefore the main section of this chapter focuses on Castells’ work, which is critically reviewed. It is that the idea of network logic offers a useful and interesting way of thinking about the role of ICTs in higher education, however, the framework found to be most useful for the type of micro case studies of this thesis will draw primarily from the social shaping of technology approach.

Section one: post-industrial society theory
The concept of post-industrial society became topical in the 1960s and 1970s. However, it was used as early as 1917 by Arthur J. Perry, an American Guild Socialist, in his *Old Worlds for New: a Study of the Post-industrial State*. It became common after World War II (Dearnley and Feather, 2001) and Bell’s (1974, 1980) work has been considered a landmark of post-industrial society theories which influenced other sociologists such as Lyotard (1986) and Castells (1989, 1996). This section traces the early development of information society theory in the works of Bell (1974), Machlup (1962, 1975) and Drucker (1968) and their subsequent influence on futurism.

Post-industrial society theory is rooted in the analysis of the occupational changes
identified from the 1940s onwards. During this period, the division of labour in the US significantly changed with the rise of the white collar worker. This was perceived as a profound change in the occupational distribution of power and status. In order to grasp the shift, a number of studies were conducted by sociologists such as Wright Mills (1956) and Machlup (1962). Although post-industrial society theory is associated with trends emerging in the US, it is worthwhile remembering it occurred elsewhere too. In Japan, for example, a sociologist, Umesao, was one of the early advocates of the coming of the information age offering an analysis of its social implications and consequences for social change as early as 1962. There are also some suggestions that the term ‘information society’ (Johoka-shakai in Japanese) originated in Japan in the early 1960s (Masuda, 1980, 1990; Ito, 1981).

Machlup (1962) developed the idea of an ‘information economy’ by identifying the production and distribution of knowledge sectors for economic assessment, providing empirical statistical data. He analyses the changes during the period of the 1950s and the early 1960s and examines expenditure on the following sectors of the economy: education, research and development, broadcasting including media, communication and information and legal and information services. His data on the growth in the proportion of the labour force in knowledge-related occupations between 1900 and 1959 informed his argument that information, in particular knowledge, would become central to all human societies. He maintains that the growth of technical knowledge and consequent growth of productivity are crucial for economic growth. In his later work, Machlup (1975) places a particular emphasis on education as one of the most important social institutions for productive contribution.

Machlup’s work was politically influential and led to the US government’s commissioned research into the ‘information economy’, conducted by Marc Porat (1977). He redefined Machlup’s structure of the economy, adding a new category of information sector to the traditional agricultural, industrial and service sectors.
Furthermore, he re-categorises the information sectors into the following: 1) the primary sector, in which knowledge industries manipulate knowledge and information to produce new knowledge products/services; 2) the secondary sector in which knowledge and information manipulation was one part of material production processes, information being utilised in the production and sale of material outputs and the provision of services.

Bell’s (1974) theory also starts from empirical observation emphasising productivity and economic growth generated in the work process and in the distribution of wealth. He identified the knowledge industry with the service sector, and argued that the post-industrial society was a service-based economy that was knowledge-driven. It is, according to Bell, characterized by three factors; the shift from goods-production to service-provision, technology advances and policy formulation. Bell framed the information society into three important segments: higher education, research and development, and the production of knowledge as intellectual property. He claims that the class structure changes towards a status-based structure, which predominantly consists of people working in professional and technical occupations. That is, blue-collar, manual labour is replaced by professional and technical jobs. This led him to argue that the country’s wealth relies not on industrial labour any longer but on the processing, packaging and use of data and information. Bell claims that in post-industrial society information is the major key to wealth.

Bell (1974) uses the term ‘post-industrial society’ as a signifier for the emerging ‘information society’. Although it would be some time before the so-called ‘communication-revolution’, he predicted that these changes would occur as a result of ‘the merging technologies of telephone, computer, facsimile, cable television and video discs, leading to a vast reorganization in the modes of communication between persons; the transmission of data, new modes of transmitting news, entertainment and knowledge’ (Bell, 1980: 533). His analysis of the occupational shift is basically
underpinned by the production of theoretical knowledge in that the major source of structural change in society is a change in the character of knowledge:

Post-industrial society is organized around knowledge, for the purpose of social control and the directing of innovation and change; and this in turn gives rise to new social relationships and new structures which have to be managed politically. ... Distinctive about the post-industrial society is the change in the character of knowledge itself. What has become decisive for the organisation of decisions and the direction of change is the centrality of theoretical knowledge – the primacy of theory over empiricism and the codification of knowledge into abstract systems of symbols that can be used to illuminate many different and varied areas of experience. Every modern society now lives by innovation and the social control of change, and tries to anticipate the future in order to plan ahead. This commitment to social control introduces the need for planning and forecasting into society. It is the altered awareness of the nature of innovation that makes theoretical knowledge so crucial ... (Bell, 1974: 20).

The character of knowledge changes and an emphasis is placed on theoretical knowledge which is the core source of innovation and growth, and policy formulation. Emphasising the significance of science and technology, he predicated that technological development comes within the ambit of human control and planning and technological goals can be set and activities co-ordinated to accomplish them. Also, he predicated intellectual technology would increase in significance. Reflecting this, he claims knowledge institutions such as universities would become central social institutions for knowledge production in science and technology. These early theoretical formulations of post-industrial society inspired a wave of subsequent speculative work on the future possibilities of the new technologies and knowledge production (cf. Gibbons, 1994).

As society witnessed the dramatic improvement in the capability of microcomputers in the 1980s, post-information society theories were radicalized and diversified, and took on futuristic views of post-industrialism. A key figure amongst the futurists, Alvin
Toffler in his *The Third Wave* (1981), forecast the coming of the ‘home-centred society’ as well as the ‘electronic cottage’. This drew on McLuhan’s (1989) notion of the ‘global village’ which foresaw social change through electronic media as the determining principle of culture. Toffler’s *The Third Wave* used a historical perspective to argue that the process of transition was from agrarian society (the first wave) through to industrial society (the second wave) and followed by an information society (the third wave). He perceives knowledge/information as the primary resource on which our society and economy is built. In his argument centralisation, bureaucratisation, and rationalisation are characteristics of the third wave. He predicted that we would consume a range of activities such as entertainment and education at home via communication systems. During this period, the viewpoint of the information society shifted from an economy to be more socially focused.

Words like ‘communication revolution’ and ‘control revolution’ symbolise the period of the early 1990s. The shared perception was that the revolution will change our lives and that they had a mission to alert an ignorant and complacent public (Robins and Webster, 1999: 65). While Toffler’s close contacts with American policy-makers had a major impact on the way the information society was thought about in the US (May, 2002), another influential futurist, Nicholas Negroponte (1995), also had strong links with industry. However, not all the futurists were complacent about the positive potential of these developments. Another line of discourse presents technology as being out of control. Ellul (1964), for example, had a pessimistic view of the future and argued that the importance attributed to ‘technique’ is so autonomous and irresistible that it enslaves almost everything. He claims that, although people exploit technology, the human actor only becomes more and more the object of technique because of the autonomy of technology. In this view technology is beyond our control, so that people are forced to adapt to it and he concludes that contemporary values, choice, and ideas are dominated by technique in the end. Also, Postman’s (1993) account of ‘technopoly’ pointed to its controlling and debilitating impact. He draws a distinction between ‘technocracy’ which
characterizes a society which derives advantages from its deployment, but still retains its traditional myths, moral rules and so on in a creative and vital clash between the old and the new. ‘Technopoly’, on the other hand, dismisses the technological world view (Postman, 1993).

Reflecting these trends, Silverstone (1995) gives us a sharp insight into this intensification of interest in the information society as follows:

... the utopias are the product of industrial, marketing and media efforts to create a self-fulfilling prophecy in which such changes are seen not only to be welcome but inevitable, natural and necessary, since they do not simply emerge fully formed from natural desires, innocent perceptions or even previous experiences. Revolution is evolution in disguise and needs have to be created. Utopianism is actually intrinsic to modernity (Silverstone, 1995: 63).

As Silverstone points out, post-industrial society is paradoxical – the theory evolved from the idea that modern industrial society comes to an end, and developed as a counter-argument to industrialism. However, its utopian nature is, in fact, rooted in modernity. As Giddens (1990) mentions, utopianism has to go beyond the dynamism of modernity since structural possibilities of transition offered by the institutions of modernity are limited. The utopian moment is crucial, for without it there is no innovation or transcendence.

The limitations of post-industrial society theories
Key criticisms of post-industrial society theory are reviewed below.

1) Ambiguity of information and knowledge
The first criticism against post-industrial society theory is the ambiguity of the terms, information and knowledge. Bell (1974) is aware of their difference, however, he tends to use them as synonyms. For example, while he explains that post-industrial society is an information society, he also refers to it as a ‘knowledge society’. This ambiguity
seems to be accelerated by the Internet since it has enhanced access to information. It may be thought that more data will lead to more information, which in turn generate more knowledge, however, it is important to bear in mind the ‘critical process that creates knowledge and wisdom from the mass of data’ (Howcroft, 1999: 283). The distinction between data, information and knowledge particularly in the context of learning is significant. As Longworth (1999) illustrates, information comprises a set of data which needs to be interpreted and processed intellectually in order for it to be meaningful. Knowledge involves more complex processes of generation and transmission than information (Delanty, 2002). These distinctions increase in importance in teaching and learning in the information age.

As is seen in Figure 1, information is not knowledge: knowledge comes from sorting, filtering and using information. It is as more about assessing than it is about accessing. It’s also about understanding the contexts of production, distribution and consumption (Longworth, 1999). In sum, knowledge and wisdom after information processing can be achieved only by processing information mentally and technically. This unclear use of the two terms, knowledge and Information, can create a problem in the context of education. In the context of e-learning, excessive information which is not able to be
turned into knowledge can cause a problem - information overload (Hiltz and Turoff, 1977), ‘data smog’ (Schenk, 1997) or ‘information and communication overload’ (Dijik, 1999: 176).

2) Problems with the categorization of service industry
Post-industrial society theories are based on different bases of empirical evidence. However, the empirical parts of those studies are not often approved by sociologists because of the ambiguous notion of ‘service’ and its categorization (Gershuny and Miles, 1983; Castells, 1976, 1996). Furthermore, as Castells (1989) points out, the notion of post-industrial society is a purely negative one in that they claim that manufacturing is no longer at the centre of the economy. Castells argues that the rise in the importance of services cannot be directly correlated with the decline of manufacturing, and refutes the demise of manufacturing by presenting empirical data from Japan and Germany which are still strong in manufacturing. Castells also argues that the division of the economy into primary, secondary and tertiary sectors is too simplistic and misleading.

3) The end of ideology – utopian view of new society
Another problem with post-industrialism was to equate it with the claims of the end of ideology. Prior to his The Coming of Post-industrial Society (1974), Bell produced The End of Ideology in 1960, which clarifies his view of the influence of new technologies in society. In it the growth of new technologies was claimed to be neutral and above the sectional interest of classes and diverse groups. His argument is infused with technocratic viewpoints and, inevitably, the role of technologies in consolidating and enhancing the power of those who controlled it, is overlooked. In the context of globalisation and subsequent development of information society theory, this question of power is clearly of significance.

4) Technological determinism
To varying degrees the work of theorists and futurists involved a technological determinism where technology is seen as something which follows its own logic or imperative. Therefore, technology in general is perceived as the prime cause of changes in society and is seen as the fundamental condition underlying the pattern of social organisation. For instance, this type of argument would locate social and economic life as a dependent variable and technological innovation as an independent variable in terms of different ways of living – those societies and groups with access to the more advanced technologies would, from this point of view, entail more advanced developments in patterns of social organisation. The problem with this position, of course, is that technological determinism is essentially a reductionist claim that seeks to simplify the complexity of the relationship between technologies and society to a linier argument of a simple ‘cause and effect’ relationship. The naivety of this argument inspired various counter-positions which sought to highlight the more complex nature of technology in social, political, economic and cultural life. This is perhaps best exemplified in the work of Castells which is examined next.

Section two: network logic
The primary focus of this section is Manuel Castells’ (1996, 1997a, 1998) trilogy on the ‘network society’. Castells provides a sophisticated version of information society theory, the ‘network society’, based on extensive analysis of current global developments. He was not the first, however, to use this term. Van Dijik (1991 in Dutch; 1999 in English), for example, argues that modern society is becoming a network society by increasingly organising its relationships in media networks which are gradually replacing the social networks of face to face communication. However, it is Castells work that has by far made the major contribution to conceptualising and explaining this trend - although it is important to be cautious with all claims to newness based primarily on technological advancement. Rather than perceiving the ‘network society’ as an entirely new form of society with a clear break from the modern industrial period as many information theorists have done, Castells’ work is sensitive to these
concerns. He also emphasises the significant role of ICTs as the real motor of change is a 'technological revolution centred around information technologies' (1996: 1). Therefore, the economic and geographical restructuring resulting from this is reshaping the form of capitalism on a global basis.

The significance of 'informationalism'

The term 'informational' is used by Castells (1996) to indicate that the social attributes of information generation and processing go beyond the impact of ICTs. On the one hand, 'information' is used in its broadest sense as 'communication of knowledge', and Castells perceives it critical to all societies. On the other, 'informational' indicates that attribute of a specific form of social organisation in which information generation, processing, and transmission become the fundamental sources of productivity and power, because of new technological conditions emerging in this historical period (Castells, 1996). This distinction has a parallel with that between industry and industrial. An industrial society is not simply a society where there is industry. Industrial implies that the organisation of a whole range of activities in the economy, military technology and everyday life are organised along new principles that conflict with previous patterns of organisation. For example, rural societies may be geared towards a seasonal way of life influenced by traditional patterns of activity whereas industrial life is geared towards more controlled uses of time. Similarly, informational means much more than the use of information and knowledge in productive processes. Informational is used to highlight a significantly different pattern of organisation not only in the economy, but in other aspects of everyday life too.

Castells argues that the emergence of a new social structure is produced by the 'informational mode of development'. Societies can be characterised along two interrelating axes which are the mode of production and mode of development (Castells, 1996). The two main modes of production for the 20th century are capitalism and statism. These involve social relations which regulate how the surplus in society is
appropriated and distributed, who benefits and who does not. In capitalism the mode of production is directed to profit maximisation. Under statism it is geared more towards power maximisation. The mode of development, on the other hand, determines the level of surplus generated by the techniques of development within any mode of production. In the informational mode of development the key technological factors are information processing, knowledge generation and symbolic communication. Moreover, the goal of the informational mode of development is the greater accumulation of knowledge and information. Characteristic of this is ‘the action of knowledge upon knowledge itself as the main source of productivity’ (Castells, 1996:17). Thus traditional factors in wealth production (e.g. land and labour) are being outstripped by informational factors. Electronically mediated networks support the development and dissemination of knowledge and information. As a result, the mobilisation and co-ordination of knowledge and information has increased exponentially - hence its importance. This has wider consequences in that ‘the new social structure is associated with the emergence of a new mode of development, that is, informationalism, historically shaped by the restructuring of the capitalist mode of production towards the end of the twentieth century’ (Castells, 1996: 14).

For Castells (1989), the main process of transition is not the shift from goods to services but the emergence of information processing as the core, fundamental activity, conditioning the effectiveness and productivity of all processes of production, distribution, consumption, and management. He argues that this new centrality of information processing results from evolution in all the fundamental spheres of the industrial mode of development, under the influence of economic and social factors and structured largely by the mode of production (Webster, 1997b). Castells explains that the crisis of the capitalist mode of production in the 1970s became the foundation for the informational mode of development to grow amidst economic upheaval. Consequently, restructuring and informationalism were linked as capitalism was rejuvenated by new technologies (Webster, 1995).
He also places particular emphasis on the ‘spirit of informationalism’ (Castells, 1996). The logic of capitalism is essentially profit-seeking in capital-labour relationships through enhancing their mutual productivity, globalising production, circulation, and markets, seizing the opportunity for the most advantageous conditions for profit-making everywhere and marshalling the states support for productivity gains and competitiveness of national economies. Whilst this logic is still dominant, it is profoundly modified by informationalism. Thus, instead of breaking with capitalist development, informationalism is linked to its expansion and rejuvenation through ‘the new material, technological basis of economic activity and social organisation’ (Castells, 1996: 15).

Castells draws on a large amount of secondary empirical evidence to suggest that the response to such processes vary according to history, culture, and institutions. He makes the point that it is improper to refer to an informational society as the homogeneity of social forms by presenting examples of diverse and unique patterns of development in Japan and Spain. These differences are not going to ‘fade away in a process of cultural indifferentiation, marching anew towards universal modernisation, this time measured by rates of computer diffusion’ (Castells, 1996: 20). The dynamics of informationalism are also transforming the nature of work, and the occupational and social structure. For example, labour has become less standardised and, instead, flexibility has become the norm for organisations and individuals (May, 2002). A central driving force in this transformation is what Castells’ calls ‘network logic’.

‘Space of flows’ and ‘timeless time’

Castells proposes that the network society is organised around new forms of ‘timeless time’ and ‘space of flows’. By ‘timeless time’ he means the use of ICTs to reduce the time taken to circulate information electronically in ways that were previously impossible - to compress years into seconds. It is now possible to connect with others
globally and instantaneously despite real time differences. By the ‘space of flows’, he refers to the role ICTs play in creating new social practices that connects people in ways that were not possible before. These can generate meanings which parallel (and may begin to replace) those which place (as a physical space) such as communities did in the past (Castells, 1997b). He argues that timeless time belongs to the space of flows - flows occur in timeless time whilst real places are time-bounded. This new spatial logic, the ‘space of flows’, is becoming the dominant manifestation of power and function in our societies. His argument is that contemporary society is constructed around flows of capital, information, technology, organisational interaction, images, sounds, and symbols. Flows are the expression of processes dominating our economic, political, and symbolic life.

There are three factors which constitute the space of flows: first, it involves an actual material electronic circuit, second, nodal points which are the linkages within the circuit and, third, it involves the spatial organization of the dominant managerial elites who have no particular attachment to a specific place.

The more social organisation is based upon the space of flows the more they supersede the logic of a specific place, the more global power sources can escape the socio-political control of historically specific local and national societies (Castells, 1996). A new form of society is emerging in which the diffusion and circulation of information connects and controls people and institutions on a global scale. It controls in that the space of flows tends to disperse ‘subordinate functions, and people, in the multiple space of places, made up of locales increasingly segregated and disconnected from each other’ (Castells, 1996: 476). In essence, the space of flows ‘add[s] power and flexibility to corporations in their dealing with the physical spaces of cities’. These are exemplified by transnational organisations which play a major role in the global economy.

Networks are highly dynamic, open structures that have a capacity to expand in
seemingly limitless ways. Networked structures are capable of integrating new nodes as long as they are able to share similar meanings and values. A society structured by network logic is both more open to change and also more susceptible to innovation without being threatened by these developments. Castells argues that they increasingly provide the architecture for social relations:

[The] diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power and culture. The power of flows takes precedence over the flows of power. Presence or absence in the network and the dynamics of each network vis-a-vis others are critical sources of domination and change in our society: a society that, therefore, we may properly call the network society, characterised by the pre-eminence of social morphology over social action (Castells, 1996: 469).

Castells claims that the fates of individuals, companies and countries are ultimately defined by the logic of networks. They are the fundamental stuff of which new organisations are and will be made from (Castells, 1996). Thus, in Castells’ argument the logic of networks drives new forms of organisation and social relationships. In terms of network logic, rigid organisations such as large, vertical corporations, with oligopolistic control over markets will experience crisis. The conditions for successful organisations are that they are able to generate knowledge and process information swiftly, efficiently and flexibly. For this to occur, they need to shift towards more horizontal modes of management that are characteristics of networks. For instance, major firms, nowadays, form strategic alliances, joint ventures, and establish partnerships in different product lines and in different markets and functions (Castells, 1999).

However, more open and dynamic structures do not necessarily mean more democratic forms of organisation. Information networks may allow organisations to increasing centralise decision-making. Decentralisation and centralisation are simultaneous and
non-contradictory trends in that a centralised headquarters can in fact monitor and co-
ordinate highly dispersed and decentralised organisational interests. As Castells argues,
globalised information networks provide corporations with the infrastructure to allow
world-wide decentralisation of operations while ensuring that centralised management
remains in overall control (Webster, 1995).

Webster (1997b) points out that this position prioritises networks over everything. In
Castells’ argument, instantaneous response and flexible adaptability are the most
important thing for organisations and corporations to strive for in a competitive global
market. Under such circumstances, he claims what counts above all are networks since it
is they that deliver products and services on time and at a favourable price. In short,
what we have is the ‘transformation of corporations into networks’ (Castells, 1996:
115).

The significance of the above trends for the occupational structure is also important.
Transformations in production systems transforms the occupational structure and
consequently, the class system by ‘demassifying’ the working class (Castells, 1999).
This is characterised by the rise of highly educated social groups, in particular managers,
professionals, and technicians, who are creating a new elite. In order to survive in this
rapidly changing, competitive, global informational capitalistic environment, people are
required to possess transferable skills. That is, labour in the e-economy must be able to
re-programme themselves, in skills, knowledge, and thinking according to changing
tasks in an evolving business environment. The responsibility for this has implications
for educational institutions.

Self-programmable labour requires a certain type of education, in
which the stock of knowledge and information accumulated in the
worker’s mind can be expanded and modified throughout his or her
working life. This has extraordinary demands placed on the
education system, both during the formative years, and during the
constant re-training and re-learning processes that continue
throughout adult life. Among other consequences, an e-economy requires the development of e-learning as a durable companion of professional life. The most important features of this learning process are, first, learning how to learn, since most specific information is likely to become obsolete in a few years, as we operate in an economy changing at Internet speed; secondly, having the ability to transform the information obtained from the learning process into specific knowledge. (Castells, 2001: 90-91)

Thus, Castells explains the relationship between labour, knowledge and education in conjunction with the nature of ICTs, which enable access to information and knowledge, as having a significant impact even upon universities and as having brought about a 'demise of individual possession of knowledge' (Gergen, 2001: 117-18). Knowledge has become something to be shared and socialised by networks. This means that schools and universities are gradually losing the monopoly of creating and transmitting knowledge. People are expected to continually up-date skills and knowledge in related areas: this expectation (and some times coercion) is reflected in the policy in many countries taking the form of the resurgence of adult learning, lifelong learning, vocational training or e-learning. Thus, Castells certainly points out the changing environment surrounding learning in higher education.

**Culture of 'real virtuality'**

Castells argues that the emergence of a similar pattern of networking, flexibility and ephemeral symbolic communication via electronic media is witnessed in the cultural realm. He argues:

> While there is oligopolistic concentration of multimedia groups around the world, there is at the same time, market segmentation, and increasing interaction by and among the individuals that break up the uniformity of a mass audience. These processes induce the formation of what I call the culture of real virtuality. It is so, and not virtual reality, because when our symbolic environment is, by and large, structured in this inclusive, flexible, diversified hypertext, in which we navigate every day, the virtuality of this text is in fact our
reality, the symbols from which we live and communicate (Castells, 1997b: 11).

He rejects, however, the idea that the above trends lead to cultural imperialism in terms of uniform cultural expressions and the domination of ‘cultural codes’ by a few central senders. Whilst dominant codes may reflect narrow social interest; the new communication system allows a broader range of people and interests to reflect a diversity of values including the expression of social conflicts. Indeed, Castells (1998) argues that social movements offer the basis for new project identities and social change. But he reminds us of the price we have to pay for inclusion in the system is to adapt to its logic, to it language, to its points of entry, to its encoding and decoding (Castells, 1996). One of the consequences of the diffusion and spread of networks is they generate particular standards of conformity for those who seek to be included in it. On the one hand, this may simply be at a technical level but, on the other, it may involve the standardisation of language and (its implicit) values - for example, the dominance of American English (Barry, 2001).

In the dynamic processes of restructuring of society, Castells emphasises the overwhelming role of computer-mediated communication (CMC) which has a more significant role in activity taking place in our everyday life, in particular, at work or in work-related situations. In his argument, CMCs are of critical importance for the new form of networked organisation and for the specific labour conditions of those on the network.

**Criticisms of Castells' theory**

Because Castells' work has been highly influential it has also been subjected to critical interrogation. Some of the main criticisms that have been raised about his work are identified below.

1) **Primacy of network logic**
Castells has been criticised for overstating the primacy of ‘network logic’ in creating resources of meaning. He emphasises ‘network logic’ as a kind of self-expanding flexible structure which induces the idea that enterprises, organisations or states are all governed by networks. Webster (1997a: 111) comments that Castells (1996: 193) baldly states that ‘the logic of the network is more powerful than the powers in the network’ without substantiating this assertion.

Slevin (2000) also criticises Castells for an overly simplified view that networks create unitary conditions by arguing that all networks of social interaction consist of ‘social practices, situated in time-space, and organised in a skilled and knowledgeable fashion by human agents’ (Slevin, 2000: 52). The primacy of network logic leads Castells to devalue the significance of the local in a global network society as follows:

Localities become disembodied from their cultural, historical, geographical meaning, and reintegrated into functional networks or into image collages, inducing a space of flows that substitutes for the space of places. The space of flows and timeless time are the material foundations of a new culture (Castells, 1995: 406).

This argument of the ‘disembodiment of organisations’ is extreme. In some cases, it may be true in that some organisations/ institutions are successful in recreating a new identity through being disembodied from their locally, historically, culturally, geographically embedded images or identities. However, cultural and historical elements can be deeply embedded in the organisational context; the significance of the local should not be underestimated. Linked with this, Webster (2004) rejects the primacy of the space of flows by claiming that the ‘space of place’ continues to be the predominant means of experience, of everyday life, and of social and political control since places root people into cultures and transmit history. Whilst some ‘elites’ may transcend all this they are the exception rather than the rule. What is missing in his study is a more micro analysis of how local places, actors or even people working or living in places respond to the space of flows.
2) Technological determinism

It is claimed that Castells' argument, stripped of its elaborate conceptual apparatus, is basically a technologically determinist position. For example, Abell and Reyniers (2000: 742) point out that whilst Castells claims that the course of the revolution is decisively shaped by historical context he asserts the causality of the transformation is 'technically induced' rather than socially determined'. Contrary to his original intention, he fails to link historical and cultural account with the interpretation of the restructuring of the society and results in concluding his argument in a technological deterministic way.

3) The ambiguity of his concept of 'network'

Castells (1996: 78) says that 'a networked, deeply interdependent economy emerges'. Abell and Reyniers (2000) criticise this claim by pointing out that his argument comes out of the confusion of 'connectedness' or 'networked' with 'dependence'. In Castells' argument the condition of 'being connected' implies a negative correlation between these two concepts in economic and social networks. ICTs do facilitate connection, however, it does not mean that economies become more interdependent to each other. Abell and Reyniers (2000) argue that easier access to information about suppliers, customers and competitors and the resulting increase in competitiveness should make each actor less dependent.

Furthermore, for Castells, networked organisations mean the shifting from vertical to horizontal management. However, the reality seems to be more complicated than Castells picture depicts. Abell and Reyniers (2000) argue that the networks Castells refers to are, in fact, an amalgam of horizontal and hierarchical relations. Therefore, Castells' explanation of networked organisations may not capture the internal complexity in terms of decision-making. They further argue that, although Castells implicitly recognises the possibility of complexity by apparently postulating an interaction between ICT and 'institutional context', the level of specification of their
relationship is too vague and over-simplified.

4) **Too much emphasis on informational labour/ information and knowledge**

Castells (1996) argues that ‘ informational labour’ is increasing important in the network society because of demands for high levels of education, knowledge and skills. He argues that the highly educated are the problem-solvers who can communicate, analyse and plan to great effect and are, therefore, more powerful. However, Perkin (1989) claims that the emergence of a ‘professional society’ in the UK has existed since at least 1880 and that there are no compelling reasons to highlight their emergence in recent years as in some way indicative of any change profound enough to merit the title ‘information age’ (Perkins, 1989; Robins and Webster, 1999). Due to the diffusion of mass education systems - on-campus as well as at distance - a huge number of people with knowledge or skills have been ‘produced’ every year. If we follow Castells’ idea, they are ‘all’ potentially ‘self-programmable labour’ or ‘informational labour’ bestowed with a good deal of fortune. However, to what extent does this reflect the reality? For example, Webster (1999b) claims that graduates are now aware that possessing a degree is no longer a passport to a job for life and many are seeking transferable skills in university education.

5) **His argument are not necessarily supported by his data**

Castells’ starting point is that networks have created fundamental changes and that electronic networking – the internet in particular- is a key factor in this. He also exemplifies this point by drawing upon the cases of Cisco, Dell and a Spanish clothing company Zara (Castells, 2001). Despite the fact that Castells analyses the current situation on the basis of a huge amount of secondary data across countries, he does not go for analysing or arguing how local places, urban actors or even people living in places respond to the space of flows. This is mainly due to his macroscopic quantitative analysis.
6) Supremacy of a culture of real virtuality

Castells also over-emphasises the potential of computer-mediated communication (CMC) to produce a virtual culture. He therefore overlooks the fact that ‘face-to-face relations certainly do not disappear, though they may not predominate’ (Calhoun, 1992: 208). This is certainly one of the important issues when we discuss interactive communication in virtual learning environments in e-learning at university level. If we only look at virtual universities and full e-learning programmes, his arguments seem to grasp some successful cases of virtual learning through CMC fairly well. However, it will not be able to cover the case of orthodox universities, which are still predominant at present and even fairly innovative universities often hold dual-modes of teaching and learning on-campus and off-campus.

As the above criticisms show whilst the work of Castells has been influential it has also been contested. In particular the point made above about limited empirical data is significant. In the following section three distinct discourses on this relationship are outlined: the social construction of technology, actor network theory and the social shaping of technology. What they have in common is a greater emphasis on small scale studies which highlight the role of human agency in shaping how technology is positioned and used in a wider set of social relationships.

Section three: social constructivist discourses

In the 1980s, technological deterministic views were predominant in the discourse of technology and society. The treatment of technology as an autonomous independent determinant in social change was questioned by social constructivists in the field of sociology of technology and science. It has its origin in the sociology of scientific knowledge (SSK) which claims that nature does not dictate scientific fact and it argues that ‘the interpretive flexibility of observations and propositions that other readings are possible’ and ‘which of the possible readings subsequently stabilizes into generally accepted knowledge is subject to social processes’ (Bijker, 2001: 24-25). Since the
1980s, SSK-research has produced a variety of different analytical approaches building on this work; one of the most influential is the social construction of technology (SCOT), which dates back to the early 1980s.

Bijker, Hughes and Pinch (1987), argue that the characteristics of the environment in which the technology is formulated, developed, tested, and implemented are reflected in the technology itself and therefore, technology is a social product. They demonstrated this by using a detailed case-study-based analysis of a bicycle in the process of design and development from multi-directorial ways (Bijker, Hughes and Pinch, 1987). Unlike the technological deterministic approach, the SCOT lays an emphasis on the role of various kinds of actors in the processes involved. They perceive individuals, social groups and institutions as important actors who have a certain degree of choice in shaping the design, development and application of technologies.

The characteristics of the SCOT approach could be summarized in four key concepts: ‘relevant social groups’, ‘interpretive flexibility’, ‘closure’ and ‘stabilization’. The development of technological systems goes through three stages. A relevant social group is one in which all members share an understanding of the meaning of a certain artifact. Different social groups often give different meanings to the same artifact. A relevant social group gives a specific meaning to an artifact and perceives a set of specific problems with respect to it. First, interpretive flexibility is the stage of conflict and means uncertainty about the artifact’s final form. People can have different interpretations for a particular artifact. Through negotiation, they shift to the next stage of ‘closure’ and ‘stabilization’, both of which occur when artefacts are having fewer problems and a particular form is becoming increasingly dominant. The artefacts go through ‘closure’, when specific social mechanisms limit interpretive flexibility and close debate. After that, there is a stage of relative closure, when artefacts are inserted into a wider economic, cultural and political context (Collins, 1981). Apart from this, ‘closure’ and ‘stabilisation’ of a technological model can also occur by being influenced.
by a ‘relevant social group’ (Bijker, Hughes and Pinch, 1987; Pinch, 1996). They claim that technologies emerge out of processes of choice and negotiation between ‘relevant social groups’ and conclude that different interpretations by social groups of the content of artefacts lead by means of different chains of problems and solutions to different further developments (Bijker, Hughes and Pinch, 1987).

**Critiques of SCOT**

1) *Social determinism*

SCOT is significant in that it takes account of the social factors in the processes of technological development obtained from detailed case studies, which refute technological determinism. Nevertheless, SCOT turns out to be the exactly the opposite position, that is ‘hard’ social determinism, since it views society as ‘the absolute planner of scientific and technological change’ (Williams and Edge, 1996).

2) *Narrow focus on the developmental stages*

Some other important weaknesses have been pointed out, although SCOT was refined and developed to a certain degree over years (Misa, 1996). In the first place, it is often said that ‘there is too narrow an emphasis upon the design stage and the early development of a technology, without sufficient attention being paid to the users of technology’ (Mackay and Gillespie, 1992; Russell, 1986; Bijker, Hughes and Pinch, 1987). This was because this approach was originally developed to analyse the design stage of technologies. As for this criticism, Pinch admits that it is essentially correct (Mackay and Gillespie, 1992), although the original founders of SCOT like Bijker (1995) have been trying to modify the original model to take account of the process of diffusion as well as that of design. Not only the process of diffusion, but also the process of implementation of technology should be paid attention to for a thorough understanding of technology because technology continues to be shaped by users in the process of implementation and diffusion.
3) *Technology is not science*
Russell and Williams (1987: 4) argue that ‘it is inappropriate to transfer the approach and concepts of relativistic sociology of science to the sociology of technology’. The SCOT approach is based on the idea that science and technology as activities and products can be treated similarly. However, Russell (1986) argues that to transfer the concepts of sociology of science to technology is to ignore basic differences between the two, as activities and as products. In fact, this has caused a number of serious problems. For example, Russell and Williams (1987: 4) argue that ‘it is also inappropriate to use the notions of ‘closure’ of scientific debates and ‘success/failure’ of scientific theories for the analysis of technology’. This is because closure in science brings connotations of consensus within a scientific community, while a technological solution may be imposed without a consensus amongst the various groups involved since so many different kinds of social groups may get involved with the technological development. Therefore, it is important to take into account power relationship between the social groups. They insist that ‘it is necessary to have a look at how and in what circumstance actors construct the developmental path of technology’ (Russell and Williams, 1987: 4). Take-up by different social groups means opening up other possibilities of the trajectories of technology. The process of closure would not be as simple as in the case of science.

4) *Missing out the relationship between relevant social groups and the macro-political context*
SCOT underestimates the social relationships and power structures between different social groups and the macro-political context (Russell, 1986). As for social structure, the concept of it is not adequate when they discuss ‘social groups’. This is because SCOT tends to only identify the relevant social groups and provide descriptions of them without paying enough attention to social structure itself. Instead, Russell suggests that groups need locating in a structured and historical context in order to avoid structural exclusion.
5) *Part of technological determinism is still valid*

SCOT neglects the valid aspect of technological determinism. In the process of developing and implementing technology, society needs to adjust itself to the technological change as well as society helping to shape the technology. Williams and Edge (1996) describes this as soft technological determinism.

6) *Lack of political awareness*

Moreover, it is also pointed out that the underestimation of politics is one of the greatest weaknesses of SCOT. For example, Winner (1993: 375) sees it as 'a naïve and relativist conception of reality' and criticises that it avoids the real politics of artefacts such as technology. The contribution of SCOT to the study of technology and society has been to explore the complexity of the relationship between technology and society and to refute over simplified technological deterministic views. The above-mentioned criticisms were taken up by other branches within this broad tradition. Another influential school is actor-network theory, which rejects the starting point of SCOT – the analytical distinction of 'technology' and 'society'.

**Actor-network theory (ANT)**

A new socio-technical approach was proposed by Michel Callon and Bruno Latour in the early 1980s (Callon, 1986a; Latour, 1987) which derived from SSK tradition but also informed by a poststructuralist perspective. The hyphen between actor and network in its title points to its emphasis on the relational nature of action and its approach is to examine ways in which these networks are constructed and how 'actors' (which can be human and non-human) are positioned within it. One of the important features of this theory is that it treats human and non-human entities symmetrically in the construction of networks. Technologies, from this point of view, are not things simply acted on by humans but are elements within a network and their meaning and role has to be understood within the way the network is constructed. Therefore, the 'social' is not
given privilege over other entities in ANT. All the entities are interdependent to make the network function. This means the missing one element can lead to the dissolution of the network (Law, 1987).

The process whereby actors are positioned in the network is described by Callon (1986b: 196) as the ‘sociology of translation’. Translation is the method by which actors can position themselves and others and it has distinctive stages:

1. Problematisation – this involves different actors being able to construct a particular way of defining an issue or concern.
2. Interessement – this is the stage of influencing recruits into the network to identify with the way the problem is defined – it involves convincing them of its value and as their problem to address.
3. Enrolement – this involves recruits in the network taking on their roles so that they act in accordance with the problematisation and its implications for their activity. Gaining actor’s support for the development of a socio-technical entity, and defining their roles and their interests and identities and orienting to suit them (Sorensen and Williams, 2002).
4. Mobilisation – if all the earlier processes are successful actors in the network can be mobilised to respond in particular ways. Their support is assured and the network is therefore able to extend its scope and influence.

ANT can be a useful approach since it lays a great emphasis on the influence of actors and negotiation processes within a network as well as perceiving that technology is part of this process. It also suggests the inherent fragility of networks which have to continually work at the process of translation in order to be successful. This perspective contrasts with the ideas of stabilisation as closure because this stability remains difficult to sustain as actors in the network have a tendency to revert to the old status or defect to participate in new networks. Translation is therefore a goal which is always open to reinterpretation (or translation into something else) as alliances shift and change with the success of actors to problematise and enroll others in particular ways. Indeed, ANT is insightful in that it can show how ‘technical’ innovations can transform ‘social’ possibilities. In particular, the concept of ‘enrolment’ can be useful in the analysis of the
processes in which other people believe in the new technological option, take it up and spread it, and interact with other heterogeneous entities.

Criticisms of ANT

However, at the same time ANT also invites some criticisms. One of the most significant is its symmetrical treatment of human and non-human actors (Callon, 1986; Collins and Yearley, 1992; Callon and Latour, 1999 [1992]; Bloor, 1999). Similar to the criticisms of SCOT, it is argued that ANT is relativist. In the symmetry of human and non-human actors, there is no real account taken of the significance of unequal social structure. It has been argued that:

Actor-network theory’s critique of conventional notions of social structure rests on the premise that innovation can make previously large actors small; the converse of this is that small actors (peace movements, non-governmental organizations...) can become large (MacKenzie and Wajcman, 1999[1985]: 433).

Thus, the treatment of social structure in ANT can be problematic. As a result, some important issues such as democracy, feminism, etc. are missed out from the analytical framework. Latour (1987:142) also admits that, after ‘three chapters there has been not a word yet on social classes, on capitalism, on economic infrastructure, not a single discussion of culture, not even an allusion to the social impact of technology’. He defends this by saying that ANT aims at accounting for the very essence of societies and natures and therefore, it does not wish to add social networks to social theory but to rebuild social theory out of networks¹. However, the lack of any moral or political discourse means that it may fail to grasp how people’s decision-making can be influenced by broader issues of discrimination and exploitation. It therefore over-emphasises micro-level action and neglects structure and differentiated power.

¹ According to Latour, ANT is not a theory of the social, but a theory of a space in which the social has become a certain type of circulation, or a theory of space and fluids circulating in a non-modern situation (Law and Hassard, 1999).
The social shaping of technology approach

ANT illustrates how different actors are enrolled to support a particular technological innovation as part of a heterogeneous network and this captures the fluidity of developmental processes of technologies within an organization.

It is worthwhile noting the importance of the micro- and the macro-sociological perspectives. MacKenzie (1988) claims the former focuses on ‘observable, day-to-day, face-to-face interaction’, on the other hand, macro-sociology studies ‘relationships one might call ‘historical’ rather than day-to-day, and spatially ‘spread out’, which deal with the state, class, and broader social processes (1988: 1). He questions whether there is a clear line between the two by the example of a missile. For example, it may be created in a local (micro) context but its significance is only appreciated outside in the non-local (macro) context. To remain local is to misunderstand it or not to see its wider significance. Instead of the dichotomy of micro- and macro, MacKenzie suggests ‘de-localisation’. Focusing only on a study of observable, day-to-day, face-to-face interaction is not appropriate. It is essential to move beyond it for the study of technology and social contexts. Micro-sociologists tend to reject theoretical and substantive work which deals with broader social structures and processes (Williams, 1988). Moreover, Russell (1986) argues that technologies are socially constructed within the broader framework of capitalist political economy typical of western nations.

In contrast, the social shaping of technology (SST) ‘seeks to grasp the complexity of the socio-economic processes involved in technological innovation’ while it looks at the negotiability of technologies between the heterogeneous players such as technical specialists, consultants, policymakers, users, etc. (Williams, 1997). This approach examines what shapes the technology and the wider social impact it achieves (MacKenzie and Wajcman, 1985) Studies in this tradition show that the generation and implementation of new technologies involve many choices between technical options.
and that a range of social factors affect which are selected. These choices influence the content of technologies and, thereby, their social implications and consequences. In this way, technology is a social product patterned by the conditions of its creation and use\(^2\) (Williams and Edge, 1996; Dutton et al., 1997).

SST includes broader structural, cultural and historical viewpoints since actors are shaped by an intangible historical and structural context as well as by their dealings with others (Russell and Williams, 1988). In recent years, it has been strongly influenced by a concern with technology policy (Sorensen and Williams, 2002). By rendering the social processes of innovation problematic, it has opened up policy issues that had been obscured by technological determinism, and by related simplistic models. Furthermore, it can address how technologies are being shaped by the users in the implementation processes since technologies facilitate, but they do not determine, and they may be used in a variety of ways. Thus, the ‘social appropriation’ of a technology is also considered a crucial factor in this approach.

SST allows us to capture the uniqueness of the local or how the local is significant in making sense of and reconstructing broader social and economic processes. That is, it involves exploring the negotiability of developments that may emanate from processes of globalisation or from top-down initiatives by the state, for example. It therefore connects the interactive processes between these different levels (e.g. top down and bottom up) in order to give both a detailed and broad understanding of what it studies.

**Summary and relevance for this study**

This chapter focused on different approaches to understanding the information society.

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\(^2\) The studies which adopted broadly homologous conceptual approaches are also seen in the area of consumption and use of technology, for example, the domestic use of technologies within the household (Silverstone and Hirsch, 1992). Or more famously, Raymond Williams presents the social history around the conception and development of television from the perspective of SST in a way. He argues that television was not simply ‘the product of an overnight flash of inspiration, but was the result of an evolving complex of social and technical factors’ (Williams, 1974: 25).
One of the key themes in this tradition has been a tendency to view technology as having a decisive role in social and economic change. It is also possible to identify a shift in the initial focus on broad economic processes to one which takes greater account of social concerns. Castells’ theory of the network society is more sophisticated than his precursors’ in that he covers historical, cultural and social elements in the restructuring processes of society through ICTs, in the context of global capitalism. He claims that network organisations are ideally suited to this new informational mode of development. In theory, networking allows organisations to decentralise activities which permit greater flexibility, whilst keeping them under central control. Thus, Castells’ theory of networks and networking can be a useful analytical tool in examining how higher educational institutions, such as universities, relate to external agents and may attempt to establish new partnership through ICTs. However, it is also important to note that applying his argument to the context of higher education is to extend the scope of his argument since he avoids analysing the domain of education (Castells, 2001). If it is to be helpful, however, it will have to be grounded in empirical accounts of the experience of universities in this new context.

The frameworks that have drawn on the social shaping of technology, on the other hand, have been developed through empirical accounts and theoretical analysis whilst attempting to bridge the macro and micro level of analysis. By drawing on this school of theoretical resources, the processes of the development of e-learning at four universities are examined.
Chapter Three

Globalisation, the knowledge society and policy discourse: the context of higher education

The society that mankind will inhabit in the 21st century is being shaped by new and powerful forces that include the globalization of economic activity, the growing importance of knowledge as a prerequisite for participation in fundamental human activities and the increasing democratization of political systems (UNESCO, 1997: 7).

OECD analysis is increasingly directed to understanding the dynamics of the knowledge-based economy and its relationship to traditional economics, as reflected in ‘new growth theory’. The growing codification of knowledge and its transmission through communications and computer networks has led to the emerging ‘information society’. The need for workers to acquire a range of skills and to continuously adapt these skills underlies the ‘learning economy’. Education will be the centre of the knowledge-based economy, and learning the tool of individual and organisational advancement (OECD, 1996a: 14).

Introduction

As the first quote above suggests globalisation is seen as a ubiquitous process with consequences for economic activity and political systems for all people. The second quote re-emphasises the economic dimension of this process through the impact of ICTs in a knowledge-based economy. Education is central to these changes and clearly these particularly impact on university education. However, the discussion of ‘globalisation’, the ‘knowledge economy’ and ‘knowledge society’ have to be treated with caution. It is quite easy to make the assumption that nation states and institutions have little control over powerful processes which they simply respond to in much the same way. If this were true, the outcome would be a large degree of uniformity between nation states and within them as institutions respond in familiar ways to the challenges of global
processes. We could only expect marginal variation in such responses as the capacity for
human intervention, choice and agency diminishes. However, terms such as
globalisation and the knowledge society/economy are problematic in that they are open
to a greater degree of interpretation than both the quotes above would suggest. As Dale
and Robertson (2002: 10) point out, the term, ‘globalisation’ is too broad and too
ambiguous ‘to be used unproblematically in determining the effects on national
education systems of the structures and processes, institutions and practices, that it
cannotes’. Caution can be underlined therefore by examining some of the different ways
in which these terms are used to refer to processes which are by no means certain. This
will reinforce the view that there is a large degree of choice institutions have in thinking
about how to respond to their current circumstances.

This chapter examines the broad background circumstances in which universities are
currently located. In order to achieve this, it is essential to examine the contested
discourse of globalisation through the review of literature and policy discourse. This
chapter reviews the globalisation thesis from three perspectives: 1) globalisation as
technological processes, 2) globalisation as political processes and 3) globalisation as
cultural processes. It then focuses on policy discourse, in particular the discourse of the
knowledge economy and its impact on universities. The specific policy context for the
UK and Japanese case studies are also briefly highlighted.

Section one: globalisation and technologies
Technological advances and economic growth have been central to the discussion of
globalisation although this was not always the case. In earlier conceptualisations,
globalisation ‘described economic developments at the world level’, often referring to
the ‘emergence of a globalized economy based on new systems of production, finance
and consumption’ (Clayton, 2004: 274). One of the most influential early globalisation
accounts in the 1970s/80s, was Wallerstein’s (1974) world-economy system. In it he
refers to the world as a single economic system and the capitalist world-economy run by
a multiplicity of political systems, not a single political centre. Wallerstein’s primary interests are in the nature of this system but points out that technology gave Europeans a solid foundation for exploration while they were searching for other new markets and resources after the collapse of feudalism (Wallerstein, 1974). The influence of technology on the economy became more obvious after the ‘communication revolution’ in the 1980s. Rosenau (1980, 1990), for example, has written extensively on the growth and significance of global ‘interdependence’ through the transformative capacities of technology before the rise of ICTs. This process is not only economic, however. In his attempt to make sense of the intensification of global interconnectedness, Rosenau points out the following:

It is technology... that has so greatly diminished geographic and social distances through the jet-powered airliner, the computer, the orbiting satellite, and the many other innovations that now move people, ideas and goods more rapidly and surely across space and time than ever before. It is technology that has profoundly altered the scale on which human affairs take place... It is technology, in short, that has fostered the interdependence of local, national and international communities that is far greater than any previous experienced. (Rosenau, 1990: 17)

Technology is the main driving force in changing geographic as well as social distances. This theme is elaborated by Giddens (1996) and Harvey (1997) through the concept of time-space via electronic media such as satellite television. Giddens argues:

Globalisation can ... be defined as the intensification of world wide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa. This is a dialectical process because such local happenings may move in an obverse direction from the very distanciated relations that shape them. Local transformation is as much as a part of globalisation as the lateral extension of social connections across time and space (Giddens, 1990: 64).

‘Time-space distanciation’, that is, the separation of time from space which occurs through modern communications and transport systems, is in Gidden’s view a
prerequisite for the modernising process as well as the core of globalisation (Giddens, 1990). For him, globalisation is essentially a process of ‘disembedding’ by which he means ‘the lifting out’ of social relations from local contexts of interaction and their restructuring across time and space’ (Giddens, 1990: 21). In theory, this allows the institutions to explore ‘manifold possibilities of change by breaking free from the restraints of local habits and practices’ which in turn can lead to making new connections between the local and global in ways that are difficult to predict in advance (Giddens, 1990: 20).

Drawing on a Marxist analysis, Harvey (1997) makes similar point to Giddens but which he terms ‘time-space compression’. He claims that initially time was compressed as capital flowed more rapidly through the restructuring of the capitalist system and space was conquered by the developments of railroads, canals, shipping, and telegraphy. Following this first phase, space was more rapidly shrunk by new transportation such as automobile and aviation as well as communication technologies such as printing, radio, television and even more significantly computers. These developments lead to the compression of time and as a result, the annihilation of space occurs. With the sophistication of microcomputers and the advent of the Internet these developments have made the changing concept of time-space even more distinctive. This time-space compression is ‘at the centre of capitalism’s dynamic’ in this analysis (Harvey, 1997: 293). In Marxist analysis capitalism was always understood as an international process which transcended nation-states. Therefore it is to the impact of globalisation on the political process that is examined next.

**Globalisation, politics and the nation-state**

The process of globalisation is impacting on the role of the nation-state. For example, the threat of terrorism and the increasing likelihood of environmental disasters which transcend sovereign states call into question their ability to act unilaterally in an effective way. The role of financial markets in the world economy is also a powerful indicator of
the decreasing options states have to respond to financial speculation and to stay outside the main parameters of accepted ideas and practices. In fact, the debate regarding the decline of the nation-state is at the core of the globalisation thesis. As Hirst and Thompson (1995) explain, it has become fashionable to assert that the era of the nation state is over, that national-level governance is ineffective in the face of globalised economic and social processes. Reflecting this idea, Sklair (1999: 144) argues that ‘many contemporary problems cannot be adequately studied at the level of nation-sates, that is, in terms of each country and its inter-national relations, but instead need to be seen in terms of global processes.’ If the scope for action of states is limited it is still directed in particular ways. ‘Globalization forces nation-states to focus more on acting as economic growth promoters for their national economies than as protectors of the national identity or a nationalist project’ (Carnoy and Rhoten, 2002: 3). It could be claimed, therefore, that the aims of the nation state become much narrower in focus by concentrating primarily on economic indicators of success.

However limited the process of political action might be at the level of the nation state it is not inconsequential. The power of the nation state should not be underestimated, for example, their capacity to wage war on one another (Giddens, 1985). The nation-state has, to some degree, significant agency in a global system of international relations. For Giddens, the ascendancy of the nation-state is a key part of the development of a system of international relations (Waters, 1995). For example, the formation of alliances between states has been one political response in which some sovereignty is given up in order to increase the overall power of the nation state in particular areas. The European Union (EU) is arguably an example of this process as well as the Association of Southeast Asian Nations (ASEAN). The union between these countries enhances their economic and political authority. Giddens’ makes the point that ‘the development of the sovereignty of the modern state from its beginnings depends upon a reflexively monitored set of relations between states’ (1987: 263) and argues that the development
of the modern state is guided increasingly by global norms concerning areas of sovereign behaviour.

However, another way of thinking about the above is a move from national capitalism to international capitalism. In this process, the interconnection between national governments and multinational corporations takes on added significance. As Epstein (1996) points out, the nation-state and capital mobility are not opposites; they go hand in hand and the former can actively assist the latter. Although the globalisation thesis has some validity, as it touches on the power of developments in political economy, this does not mean politics is irrelevant. Instead, the world economy should be thought of as one in which nation-states are still important (Murphy, 2000).

**Globalisation as a cultural process**

Possibly the most significant of the factors to examine is the relationship between globalisation and cultural processes. One of the arguments made about globalisation is that it draws attention to look at so-called ‘world cultural integration’ processes, which is characterised as ‘MacDonaldization’ or ‘Americanization’. The dominant global economies and the cultural values which underpin them and are embedded in their activities are claimed to be transforming in their wake other cultural forms. The sprouting of American burger chains in different parts of the globe seems to illustrate this trend. ‘MacDonaldization’ is ‘the process by which the principle of the fast-food restaurant are coming to dominate more and more sectors of American society as well as the rest of the world’ (Ritzer, 1993: 1). However, it is over-simplified to see globalisation in cultural terms as a one-way process and uncontrollable force. For Giddens, globalisation is a multi-causal and multi-stranded process which is contingent and uncertain: it ‘is a process of uneven development that fragments as it coordinates’ (Giddens, 1990: 175) - this is as true for the pattern of cultural development as it is for economic and political change. Giddens argues that local nationalisms are not counter-
globalisation developments since, for him, local transformations are part of the globalisation process.

However, there is some truth in the claims of the dominance of European and American ideas and values in the globalisation process. It would be surprising if this was not the case in terms of the economic, political and military might of Europe and the USA in the twentieth and twenty-first century. For instance, Spybey (1996: 25) seems to overstate it but argues that ‘world history has been overwhelmingly European history because of the very fact that it was Europeans who first acquired a pragmatic and workable world view’. What this might mean is that ‘workable’ and ‘pragmatic’ is simply a way of saying at a particular period of history European nations were able to dominate other countries. The cultural values, social and religious institutions of these dominant countries were therefore implanted throughout the world. The technological superiority of Europe during the period of industrialisation meant that with the packaging of developments such as railways in the nineteenth century came also the cultural values and beliefs with it, even if this was not being visibly traded. During the eighteenth and nineteenth centuries, the artefacts of western civilization came to be produced on the increased scale which industrialisation made possible. From this is derived Robertson’s insistence upon the late nineteenth century as the take-off of globalisation (Spybey, 1996). However, the dominance of Europe is now in decline in that the US is the more powerful state globally in terms of economic, military and cultural power (Webster, 2002).

However, global superiority in particular spheres of activity does not necessarily mean Europe or the US can simply implant its culture universally. Also despite the fact that western civilization produced the world’s first truly ‘global culture’ this does not mean that western countries continue to control it (Spybey, 1996). There are clear cases where non-western cultures have been influenced by western cultural institutions, however, it is also the case that the recipients of global processes have transformed the original one to
fit their own cultural patterns and in the process have added significantly to the global culture (Spybey, 1996). This can be illustrated by reference to a prime example, Japanese industrialisation. Whilst Japan has certainly been influenced by production systems and techniques originating in the West they have developed and changed the culture of organisational management by adapting and developing practices which are particularly Japanese3. Subsequent analyses of Japanese industrial organisation have revealed the influences of Confucian cultural patterns and of Samurai group traditions (Spybey, 1996). These are held to contribute significantly to the explanation for Japan’s success in manufacturing and its outperforming of the West in the global economy.

Spybey (1996) claims that the spread of Western institutions does not amount to total uniformity and sameness. Despite the tendency to think of globalisation as producing uniformity the outcome is often cultural pluralism For example, the West transformed its own culture into a global one precisely through contact with a plurality of other cultures. This is now termed glocalisation (Robertson, 2002 [1995]). This is an awkward term but the linking of the g with localisation conveys the active cultural process of shaping wider global trends in ways which reflect and reproduce, in new ways, the local culture. The local is not inconsequential. People do not passively receive global forces because they act back and can interpret and modify the wider global processes in ways that are creative and produce difference rather than sameness.

Roland Robertson suggests that the interpenetration of universalistic influences and particularistic reactions means that the globalization process is now quite definitely more diverse. He suggests that:

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3 Spybey (1996, 7-8) further explains that characteristic ‘forms of horizontal organizational relationship are evident in Japanese industrial organization’ and the ‘most familiar examples of this are the ‘just-in-time’ component supply networks known as kanban and also the ‘quality circles’ amongst workers known as kaizen.
My own argument involves the attempt to preserve direct attention both to particularity and difference and to universality and homogeneity. It rests largely on the thesis that we are, in the late twentieth century, witnesses to – and participants in – a massive, twofold process involving the interpenetration of the universalization of particularism and the particularization of universalism ... (Robertson, 1992: 100).

The position reaffirms the argument that the interaction is two-way and not unidirectional from the global to the local. Reproduction of culture is never a straightforward or a passive process. In the active reproduction of global culture, that which we might recognise as social change largely occurs in the form of Robertson’s interpenetration of the universal and the particular. The best example of this is Japanese and East Asian manufacturing success and the contribution of particular cultural influences, principally consisting of Confucian (or post-Confucian) socialisation processes and institutionalised forms of social group (Spybey, 1996).

To summarise, it is clear that ICTs are an integral part of the process of globalisation but what this means and what impact it has is by no means clear. The ability of ICTs to transform ‘time-space’ is highly significant but it is by no means the case that globalisation itself is leading to uniform responses particularly at the cultural level. The choices that are made are active process of engagement with global forces. Global forces are intensifying competition between nation states and the role of ICTs in relation to the ‘knowledge society/ economy’ and are setting the agenda for policy processes on an international as well as national level. However, how we understand these terms is also contested and the implications of this contest are not insignificant. It is to an examination of the knowledge economy/society that we now turn.

**Section two: the knowledge society and university**

Whilst there may be some degree of overlap between the terms knowledge economy and knowledge society they clearly point to different issues and interests. The knowledge economy is closely related to the ascendancy of human capital theory and the idea that
knowledge is equal, at least, to other traditional forces of production such as land, labour and capital. The knowledge society, on the other hand, is a broader term in that it implies the importance of knowledge across a wider sector of activities than the workplace. It also implies that, research and development now occupy a more prominent role in wealth production, particularly in the area of science and technology and that a larger share of employment is in these areas.

The human capital view is dominant in public policy both in the UK and also internationally. The close alignment of education with economic policy is underpinned by ‘new growth’ theory. This view argues that the challenges of globalisation and international competition can only be met by investment in human capital. As Coffield (2002) claims it gives governments and politicians the idea that they are actively making a difference. The development of policies for lifelong learning, for example, exemplify this and are now at the cutting edge of this intersection between education and the economy (Stedward, 2003). Coffield (2002) perceives lifelong learning as a means of social control, and argues that the reason why human capital theory is so popular among policy makers and progressive educationalists is it ‘deflects attention from the need for economic and social reform’ while it ‘offers the comforting illusion that for every complex problem there is one simple solution’ (Coffield, 2002: 183).

International ‘think tanks’ and research organisations such as the Organisation for Economic Cooperation and Development (OECD) and the World Bank have been behind the drive for knowledge economy initiatives. For example, the emergence of the information society was the defining logic for the 1998-9 World Development Report: Knowledge for Development (World Bank, 1999), a major report to the United Nations Commission on Science and Technology for Development, Knowledge Societies; Information Technology for Sustainable Development (Mansell and When, 1998) and policy statements by the OECD such as Towards a Global Information Society (OECD, 1997). The EU has also pushed member states in this direction too. The report Europe
and the Global Information Society argued that the development of information infrastructures and related applications 'is a revolutionary tide, sweeping through economic and social life' and is necessary to develop a 'common regulatory approach to bring forth a competitive, Europe-wide market for information services'. These ideas are a strong reflection of the US's Global Information Infrastructure: Agenda for Co-operation which stresses the global societal benefits that developments of information infrastructures can bring about (OECD, 1997: 11). In terms of these reports, education is reconfigured as a massively undervalued form of knowledge capital that will determine the future of work, the organization of knowledge institutions and the shape of society in the years to come (Peters, 2003).

Peters (2003) argues that we should take a much broader approach and adopt the term 'knowledge cultures' for understanding questions concerning the development of both knowledge economies and knowledge societies. He uses this term to highlight the cultural preconditions that must be in place before economies or societies based on knowledge can be established. Knowledge cultures are based on shared practices of epistemic communities and they embody culturally preferred ways of doing things, often developed over many generations. Simplified his argument is that knowledge production and dissemination requires the exchange of ideas and such exchanges, in turn, depend upon trust, reciprocal rights and responsibilities between different knowledge partners, institutional regimes and strategies, and the whole sociological baggage that comes with understanding institutions. He uses the term 'knowledge cultures' because there is not one prescription or formula that fits all institutions, societies or knowledge traditions.

Peters (2003: 375) also claims that 'knowledge capitalism will exhibit different patterns of production, ownership and innovation according to five basic regional models of

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5 'Global Information Infrastructure, Agenda for Co-operation', Al Gore, Vice-President of the US, Ronald H. Brown, Secretary of Commerce and Chairman Information Infrastructure Task Force, February 1995.
capitalism'. He is arguing that there is not one uniform pattern of development based on different cultural understandings of knowledge and learning. We can talk of Anglo-American capitalism, European social market capitalism, French state capitalism and the Japanese model. For the time being, national education systems remain overwhelmingly part of the public sector, both state owned and state controlled despite neo-liberal politics and policies being dominant in these different contexts.

**New managerialism in universities**

One of the implications of this trend (above) is that there is a culture shift in the institution of the university and its relationship to the state; Power (1997) refers to this in terms of what he calls the audit society. Universities are beginning to implement new regimes of management that more closely resemble business practice. This not only has implications for how universities are managed but it also has consequences for the status and type of knowledge universities are engaged in producing and valuing. Therefore Enlightenment values about knowledge are undermined and universities are increasingly forced into competition with each other in this context (Delanty, 2001).

The argument developed above has consequences for the internal organisation of universities. Delanty’s (2001) point is that the audit culture is reconstructing academic units into administrative units because of the imposition of the audit cultures on the university - not because of a sudden commitment to multi-disciplinarity. The result is that the department is weakened as the location of research. Increasingly ‘line managers’ exist in many British universities and strategic plans are the norm as a new managerial ethos displaces scholarly activity (Delanty: 2001: 107). The result is that departments are under pressure to ‘generate funding for research, and funded research is prized above individual research and often the highest mark of academic achievement is entrepreneurship’ (Delanty, 2001: 107). Furthermore, corporate style decision-making displaces older collegial styles of governance and power is centralised.
McNay (1995) offers one way of understanding the contradictory organisational processes that are part of the different cultural responses that universities make to change. He argues that there are four models of university organisation: the collegium, characterised by its lack of central control and high level of autonomy; the bureaucracy with its fairly loosely defined policy but tightly controlled rules and regulations for organisational practices; the corporation with its characteristically strong central control over both policy and implementation; and the enterprise, an organisational model marked by clear central goals but a considerable degree of autonomy in relation to how these goals are carried out. This is depicted diagrammatically below:

![Diagram of Controls and cultures in education institutions](image)

Figure 2 Controls and cultures in education institutions (McNay, 1995: 106)

The categories in the above table are ideal types and as such they cannot represent any one institution; however, they depict tendencies that may co-exist in a university whilst one tendency is more dominant than others. For example, McNay (1995) argues that the collegium is the classic concept of the English university represented by the college-based frameworks of Oxford and Cambridge in combination with a bureaucratic culture. While universities tend to be a complex mix of all four organisational cultures, McNay argues that over the past few decades universities have been moving from a primarily collegial organisational structure through bureaucratic and corporate modes to a predominantly enterprise-oriented model.
This depiction of the process is challenged, however. McNay’s argument suggests that higher education may be in a transitional phase and that the organisational culture of universities is for the most part moving towards devolution rather than increased centralisation. Lewis (2002: 11) notes that ‘many academics have experienced organisational restructuring in terms of an increase in bureaucratic processes and top-down corporate managerial techniques, and a parallel loss of flexibility and autonomy’. This process, she argues, is often tied to the implementation of a centralised system of networked technology. Yet this move towards more corporate approaches is not seen as unproblematic. As Lewis goes on to point out ‘in our study some university executives also expressed concerns about the limitations of corporate models of management. One of the vice chancellors emphasised the need to move away from top-down directives and narrow forms of accountability and instead to create a broader culture of cooperation and dialogue within the organisation’ (2002: 12-13). She also argues that despite centrally managed organisational structures, universities are increasingly networking and collaborating to enable greater power when lobbying government, and when dealing with benchmarking and accreditation issues – not simply for commercial reasons.

The following sections briefly look at higher education in the UK/Scottish and Japanese context.

Section three: UK and Japanese policy context

a) The UK/Scotland

This section examines how higher education systems in the UK and Japan have been influenced by external pressures as well as their own governmental policies. At the same time, the historical educational backgrounds in respective countries are referred to which indicate that the public discourse by transnational organisations does not have universal effect or rigid effectiveness over the evolving processes of national higher education systems.
Britain is one of the countries that have gone through significant changes in higher education. In particular, the changes are reflected in two major shifts; one in the 1960s and another one in the 1990s. The changes have brought the rapid expansion of student numbers as well as university numbers. This means that the two changes are marked as a transition from elite to mass higher education as evidenced in the Robbins Report (Robbins, 1963) and the Dearing Report (Dearing, 1997). After the Robbins Report, there was a significant increase in terms of the number of institutions at higher education level as figure 3 below shows.

![Number of Universities in the UK 1950-95](image)

**Figure 3 Number of Universities in the UK 1950-95** (Source: CIHE, 1996, from Watson and Taylor, 1996, p.11)

Tight (1991) argues that after the Robbins report, thirty polytechnics were established in England, Wales and Northern Ireland to have strong links with industry and the community as well as maintaining a strong part-time tradition. During the period between 1954 and 1984, the number of full-time university students nearly quadrupled and the number of part-time enrolments more than doubled. What is most notable is student numbers have more than doubled from about 800,000 to nearly 2 million since the early 1980s as indicated below.
Until the 1960s higher education in the UK was almost exclusively the concern of a small number of universities. Compared with those in many other developed countries they were characterised by social and academic elitism and by a high level of independence from government. The creation of polytechnics (subsequently elevated to university status) and the rapid expansion of the higher education sector as a whole from the late 1980s has taken place against a background of reduced public funding per student and a substitution of external accountability for the trust arrangement formerly located in the academic collegium. This has led to the emergence of a ‘managerialist’ style of leadership in higher education institutions which are, in effect, required to operate, in many respects, as businesses. Therefore in higher education as in other areas, the role of government is limited to creating the conditions in which free competition can thrive. Events and outcomes will be shaped by the market, not by the government (Scott, 1995).

The Teaching and Higher Education Act, 1998, is concerned with student finance. Full-time undergraduates have been required to pay fees for the first time in nearly 40 years since the Act came into force. As we can see, universities in the UK have been under-funded by the government, therefore, they need to earn income by responding to the
demands from potential fee-paying students or their employers. The universities have to respond to market opportunities more flexibly for their finance. One result has been systematic attempts to market themselves towards international students. One of the reasons why the UK has such high rate for the ratio of the overseas students can be partly attributed to this policy framework.

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<tr>
<td>All students in HEIs (A)</td>
<td>9,010,000</td>
<td>1,311,000</td>
<td>1,799,000</td>
<td>2,111,000</td>
<td>896,000</td>
<td>3,606,000</td>
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<td>(B) as a ratio of (A)</td>
<td>6.5%</td>
<td>18.5%</td>
<td>12.6%</td>
<td>8.5%</td>
<td>15.2%</td>
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Figure 5 Numbers of overseas students in the six largest destination countries (Source: Ohmori (2004: 8) and Ministry of Education, Culture, Sports, Science and Technology (2004: 4))

The different ratios of B to A in Japan and the UK illustrates the greater weight, or success, the UK has had in attracting overseas students. It is also interesting that Japan is in advance of the UK in terms of developing a massified system of higher education. In addition, the necessity of acquiring income has led individual departments within the university to embark on ICT-distance learning courses. Consequently, education is becoming ‘a commodity to be sold in the marketplace of learning’ (Shumar, 1997). With this realisation, there has been an increase in interest in new forms of teaching and learning made possible by new technology.

b) Japan

In contrast the Japanese education system went through dramatic changes from the 19th century to the 20th century. In particular, it is noteworthy that Japanese higher education system shifted from a European, more precisely, German, to the US system after the Second World War. As in most European countries, higher education, especially, full-time university education was aimed at the social elite in society. The first university established by the Japanese government is the Imperial University in Tokyo (the predecessor of Tokyo University), was established in 1877 to create leaders for the
country. As European universities used to be, the entrance to the Imperial University in Japan was ‘confined to prospective male inheritors of privileged positions’\(^6\). Followed by the establishment of the Imperial University in Tokyo, another Imperial University in Kyoto was founded in 1897 and some other universities were also founded.

However, the fact remains that before World War II university education was largely confined to the privileged classes since it was beyond the reach of the average Japanese citizen. It was just before the end of the First World War that the government enacted university/higher education law in 1917. This allowed other public and private universities to establish themselves which initiated the process of undermining the dominance of higher education by the Imperial Universities (Osaki, 1999).

**Japanese universities’ autonomy**

According to Ogawa (2002: 8), for the most part, ‘Japanese universities have historically been undergraduate school-centred organizations. The faculty meetings of undergraduate schools make up the core of the university; they not only have final decision making authority but also function as autonomous work units. The School Education Law acknowledges this autonomy and states that faculty meetings are a requirement (School Education Law, Article 59, 1). ‘Autonomy for Japanese universities is limited to the autonomy of each (Gakubu Jichi), instead of campus-wide autonomy’. Ogawa (2002) points out that ‘although ‘Japanese universities are often referred to in the literature as centrally organized by the Ministry of Education, each school has significant independent power. The decisions concerning the content of education and research, and the selection of academic personnel are usually left to the schools. Although their decisions are subject to the approval of the administration of the Ministry of Education, schools have, as a rule, complete self-government’ (Ogawa, 2002: 89).

\(^6\) There were minor exceptions for women only but they taught essentially the equivalent of Home Economics at university at that time.
As in other countries, education has been seen as an indispensable prerequisite to national development in Japan. In terms of ICT-related issues, Japan was far behind in terms of information infrastructure compared with other western developed countries. Over the past years, Japan has managed to catch up with the other developed countries and tried to make up for the delay. After controversial arguments in the late 1990s regarding the strong centralizing power of the government over the university system, and the interference of the government in university education, regulation was dramatically revised which has opened a new era for e-learning. Before 1999, the Ministry of Education, Sports and Science was criticised as being one of the major deterring factors regarding the development of e-learning in higher education in Japan. Mainly due to its institutional rigidities, it caused frustration among some enthusiasts of e-learning. However, this conflict between the bureaucrats and e-learning promoters regarding the application of ICTs started to be resolved in April 2001 by legislation for the deregulation of universities.

In 1998, the Japanese University Council published ‘A Vision for Universities in the 21st Century: Reform Measures for Distinction in a Competitive Environment’, which cited the usefulness of multimedia and other technologies for the enrichment of higher education, and also the need for further study on the virtual university. Moreover, the maximum number of academic credits that can be earned by means of ‘distance teaching/learning’ was extended. Nevertheless, constraints remained in the sense that the courses had to be conducted in lecture rooms synchronically with interactivity, which hampered e-learning using different new technologies such as multimedia and the Internet. However, since March 2001, the University Council of the Ministry of Education, Sports and Science has accepted e-learning which is asynchronized and not interactive as long as it can bring about almost the same effect as that of on-campus learning. This significant change has accelerated more sophisticated forms of e-learning in Japanese universities, especially private ones. As a result, learning via the Internet has been seen as one of the forms of online learning with most potential for the future. As
previously mentioned, via the Internet, learners were allowed to obtain up to half the credits necessary for a degree. Although there is a significant level of deregulation regarding online learning, only half of the total academic units was able to be obtained at a distance. Since 2003 full e-learning programmes began to be accredited.

Behind the scene of deregulation of e-learning in higher education, there is a sober reality in terms of globalisation of education and the tough management of universities. Japanese universities are in over-supply compared with the significantly dropping number of potential students entering universities as shown in the figure below.

![The population of 18-year-old students and the quota of universities](http://www.mext.go.jp/b_menu/shingi/chukyo/cyukyo4/giirokou/006/020401be.htm)

The 18-year-old population which peaked at 2.05 million has been steadily decreasing since 1992. In 2000, it was expected to fall to 1.51 million, and then is expected to drop to 1.2 million by 2010. Regardless of the potential drop of approximately 850,000 in the 18-year-old population between 1992 and 2010, the percentage of student moving onto higher education after finishing upper-secondary school has been steadily increasing
This means that Japan is reaching a universal level beyond mass higher education while universities are expanding lifelong learning as well as adult learning\textsuperscript{7}.

The market for universities, particularly private ones, is becoming more and more competitive. Furthermore, the prolonged recession has significantly influenced employment situations. Traditional lifelong employment and seniority systems have collapsed through the bankruptcy of domestic companies and the merger with foreign companies or other domestic companies. Consequently, universities in Japan are forced to produce graduates with high skills in IT and adjustability to the rapidly changing working environment.

Reflecting these uncertain circumstances, the Koizumi government (2001- ) has pronounced a new IT related policy called, ‘e-Japan’. Within this policy, the uptake of ICTs into the educational domain is one of their top priorities. After 2004 the incorporation of national universities was initiated and major restructuring of universities are currently underway. Current policy puts an emphasis particularly on the training of skilled IT engineers by introducing a plan to accept about 30,000 overseas engineers and researchers in this area. Furthermore, emphasis is laid on the expansion of the software market to include twice as much digital content as now.

**Globalisation in the context of Japanese higher education**

One of the significant issues in the change of Japanese higher education from the policy perspective is globalisation, which is clearly mentioned in the University Council’s 1998 report. It states that ‘Japanese universities must elevate the level of education and research and develop side by side with highly ranked universities of the world in the 21\textsuperscript{st} century’ (MOE, 1998). Japanese universities in the 21\textsuperscript{st} century are expected to contribute to the creation of new knowledge, technologies, and culture, and to take

\textsuperscript{7} This is obvious from the Monbusho’s its 1995 White Paper, Remaking Universities: Continuing Reform of Higher Education, lists the third major reason Japan needs university reform as a “growing need for
leadership in an international society (MOE, 1998). Despite these expectations, contemporary Japanese universities have, in recent years, been widely criticised. Ogawa (2002) explains that one of the important criticisms was on university organisational issues. In particular, the autonomy of each school in a university has been attributed as the cause of difficulties in reforming themselves to ‘meet future needs, the current system of autonomy, supported by the chair system, is an obstacle’. (Ogawa, 2002: 91) The very recent incorporation of universities in the state sector in 2003 is considered a significant reform to bring about the radical change in Japanese higher education.

Conclusion
Undoubtedly universities are under certain pressures which are caused through globalisation, increasing competition, the advancement of information technologies and the trend towards more business like approaches and corporate management practices. The purpose of the university is also brought into question particularly as policy discourses primarily dictated by the demands of the knowledge economy set the pace for what education generally and universities in particular should be doing. This does not mean, however, that agencies within universities are completely powerless to interpret and define how they will respond to these trends. The purpose of this thesis highlights specifically the nature of these responses in relation to ICTs. The pattern which the following case studies reveal shows a great deal of variation in the responses of academics to the process of deploying and developing ICTs in their teaching. What we see occurring is the simultaneous homogenisation of practice in particular circumstances as well as the opposite picture of the proliferation of variety in local practices. Why this should be the case and why it matters is the subject of the analysis chapter. Before this, however, we need to examine the four case studies in detail and the methodology informing this.

lifelong learning” (MOE, 1995).
Chapter Four

Methodology

Introduction
This study adopts two types of comparative analysis – a cross-national comparison between Japan and Scotland and an intra-sectoral comparison between two universities within each country. The two types of comparisons are particularly helpful for understanding the relationship between globalising influences and local responses which are the focus for this thesis. The purpose of this chapter is to contextualise the methods adopted in this study and explain how they have been used to gather data and what their strengths and weaknesses are. By adopting multiple methods, the study aims to offset the fallibility of relying on only one way of collecting material and this is particularly important in a study that takes into account different levels of analysis including the ‘local’, the ‘national’ and the ‘global’. It is difficult to isolate the processes of organisational change in abstraction from the wider social context in which they are located. Indeed, it is one of the arguments of this thesis that such an understanding is essential. The rationale for the selection of the methodology is analysed first. I then go on to the rationale for the selection of the institutions and interviewees including access issues. Following this, the procedures of the empirical work is reviewed. After referring to some problems and limitations of the study, the overall justification of the methodology adopted for the study is examined.

Interpretative social science: a contextualist approach
The term interpretative social science refers to qualitative research theories and methods that represent a range of philosophical, empirical and methodological orientations that have been used to make sense of society. It is characterised by a belief in a socially constructed, subjectively-based reality that takes account of the meanings people give to their activity which are, in turn, influenced by culture and history. It is often juxtaposed against positivist social science which alternatively seeks to explain social facts without
reference to the subjective and interpretive frames of reference people use. Interpretive’ social scientists, such as Rabinow and Sullivan (1979) and Seidman (1994), argue that replacing the contextual understandings of everyday life with context-free categories is neither possible nor desirable (Edles, 2002).

The approach taken in this study primarily involves qualitative research data because it seeks to identify the nuances of meaning that actors use to guide their action. Interpretive researchers have drawn upon a range of philosophical positions and theories but the approach used in this study draws upon contextualism (Pettigrew, 1985, 1997) which seeks to explain actions and processes fully in their context. Pettigrew describes this as follows:

Outer context refers to the social, economic, political, and competitive environment in which the firm operates. Inner context refers to the structure, corporate culture, and political context within through which ideas for change have to proceed. Content refers to the particular areas of transformation under examination the process of change refers to the actions, reactions, and interactions from the various interested parties as they seek to move the firm from its present to its future state (Pettigrew, 1987: 658).

However, in addition to Pettigrew, this work draws upon Strauss’s (1993: 53-54) view that ‘phenomena do not just automatically unfold nor are they straightforwardly determined by social, economic, political cultural, or any other circumstances; rather they are in part shaped by the interactions of concerned actors’ (cited in Allen, 2003: 67). In other words, we should also locate the experience of change in the intentions and aspirations of the people involved in it and see it through the lens they use to explain and account for their behaviour.

**Understanding the outer context**

The literature review and contextual analysis of the previous chapters are central to making sense of the outer context of globalisation and the trend towards network
institutions that are claimed to be transforming the university. In contemporary times, with advanced technologies, the world is getting smaller (cf. Giddens, Harvey and Castells). The forces of globalisation provide both an imperative and an opportunity. The imperative arises from the changed environment brought by globalisation, and the opportunity arises from the increased interest in international affairs among academics, policy makers and practitioners (Bray, 2003). However, to what extent does the claim reflect the truth? In order to grapple with this primary concern, it is important to look at cases from a cross-national perspective to undertake detailed case studies of the actual developmental processes within universities.

Comparative analysis can refer to inter-societal comparisons of subunits – regions, cities, institutions, organizations, and so on, or intra-societal comparisons at any one of the foregoing levels (Walton, 1973). This study involves comparative studies at both of the two levels - cross-national comparison and intra-sectoral one. These dimensions of comparison help to understand the ways in which national and institutional cultures influence the development of e-learning at university in their national and local contexts. By using this framework of comparison, the qualitative selection of contrasting cases around certain themes with multiple research instruments for data collection was attempted in the study. Such a framework addresses what Arnove and Torres (1999) call the dialect of the global and the local (Bray, 2003).

In the sphere of higher education and organisational management, comparative study has contributed to understanding the extent to which globalisation is associated with new patterns of stratification in which some states, societies and communities are increasingly enmeshed in the global order (Held et al., 1999). It is, therefore, important to incorporate an international comparative dimension to explore the question of whether a universal globalising phenomenon is occurring in the scene of e-learning at the university.
One aim of comparative research is to understand and explain the ways in which different societies and cultures experience and act upon social, economic and political changes, plus how these views relate to more general changes and thus shared experiences and actions in the face of similar concerns and pressures (May, 2001). Societies and the systems they devise reveal variable historical conditions leading to current practice and policies. This brings us to the second advantage, comparative analysis is undertaken to explain and understand differences and similarities (May, 2001). By examining different societies, we can ask why some have developed in similar ways and others in different ways. This adds to an understanding and explanation of the complicated relationship between economic, social and political systems (May, 2001). Comparisons which reveal difference and diversity and, in the above example, cultural impediments to the implementation of policy enable us to consider the macro factors which influence social and political change and the micro factors peculiar to each social setting (May, 2001). To allow for the possibility of diversity and similarity, comparative analysis considers both endogenous and exogenous factors (May, 2001).

Japan and Scotland were selected for the comparative study for a number of reasons. The most obvious comparative point is that they represent two quite distinct cultures and traditions. Scotland is part of the UK and an advanced western capitalist society; Japan is also an advanced capitalist economy but with a distinctly different history and cultural background. The two countries therefore have some important common points of reference but also important differences. In educational terms Scotland has a moderately sophisticated informational infrastructure as a whole, in that it has a relatively strong tradition of computer assisted learning (CAL) and distance education in higher education, while Japan lacks experience in the use of ICTs for teaching and learning in education. The different types of universities (public/private, old/new) in each context provided the basis for the second type of comparative analysis to be made and therefore add another justification for the selection of these countries. The different histories and institutional cultures of the universities that have been selected can be a useful point of
comparison. Finally, being Japanese and studying in Scotland meant I had the unique opportunity to draw upon a range of contacts in these countries in order to collect primary data.

**Understanding the inner context: comparative case studies**

According to Walton (1973), comparative research methods can be classified under three headings; 1) comparative case studies (both historical and firsthand), 2) comparative analysis of archival data, and 3) original comparative studies employing standardised (usually survey) methods. In this study, the first two are adopted. The comparative case-study includes might include unsystematic comparative strategies that rely on a mixture of techniques such as historical studies, selective interviewing, observation, and the casual use of archival data. The advantages of this method are that it provides detail and depth, thus potentially maximizing the validity of the results obtained and, at the same time, provide a rich fund of material for generating theory. However, it can also involve disadvantages such as the constraints of sample size, representativeness, and generalizability.

Case studies are particularly appropriate for exploratory work (Robson, 1993). Case studies are often useful for providing an understanding of areas of organizational functioning that are not well documented and which are not amenable to investigation through limited contact with organizations (Bryman, 1989). Schramm (1971) suggests the case study ‘tries to illuminate a decision or set of decisions; why they were taken, how they were implemented’. Yin (1989) notes that a case study investigates a contemporary phenomenon in its real-life context. This is where the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used. Perhaps most relevant to the present study, Yin goes on to suggest that case studies are the preferred strategy when ‘how’ and ‘why’ questions are being posed, and when the investigator has little control over events. Yin (1989) suggests that ethnographies usually require long periods of time in the ‘field’ and emphasises detailed,
observational evidence. In contrast, case studies are a form of enquiry that does not depend solely on ethnographic or participant-observer data. These approaches may sometimes represent something more of a ‘snatch and grab’ or ‘guerrilla’ style of research activity. But in the dynamic environment of high-technology this is often the best one can do. The case study is an empirical enquiry that: ‘investigates a contemporary phenomenon within its real life context; when – the boundaries between phenomenon and context are not clearly evident; and in which – multiple sources of evidence are used’ (Yin, 1989: 23).

There is something of a trade-off between looseness and selectivity in terms of research design. The looser the original design, the less selective you can afford to be in data selection in that anything might be important. On the other hand, the danger is that if you start with a strongly determined framework and conceptual blinkers, this may blind the researcher to important features of the case, or cause him or her to misinterpret evidence. There is no obvious way out of this dilemma. Practicalities may dictate the pre-structured approach, for example, if the project is on a very tight time-scale, as in much small-scale contract research (Robson, 1993).

The case study approach can depend on the ‘cogency of the theoretical reasoning’ for the validity of any logical inferences from a case or cases (Mitchell, 1983: 207). Employing ‘standardised case comparison’ in terms of the selection of cases promotes meaningful comparisons and results. Standardized case comparison may resolve some of the dilemmas already mentioned and systematically suggest a practical and meaningful strategy. As its title suggests, this method’s purpose is, according to Walton (1973), to collect original data through systematic and reproducible procedures across cases that are meaningfully comparable.

Glaser and Strauss (1967) claim that comparison groups provide, as just noted, control over the two scales of generality: first, the conceptual level, and second, the population
scope. Third, comparison groups also provide simultaneous maximisation or
minimisation of both the differences and the similarities of data that bear on the
categories being studied. This control over similarities and differences is vital for
discovering categories, and for developing and relating their theoretical properties, all
necessary for the further development of an emergent theory. By maximising and
minimising differences among comparative groups, the sociologist can control the
theoretical relevance of his/her data collection.

Given this attention to the selection of cases for comparison, according to Walton
(1973), the second feature of the method involves the use of standardised data-collection
procedures such as surveys or standard interviews with individuals selected by
reproducible purposive sampling (e.g. nominal national or snowball samples). A final and
most important feature of this method, described above, is its potential for maximising
theory generation. It offers this potential by; 1) providing the necessary in-depth,
detailed, and original evidence and 2) emphasising systematic comparison where the
hypotheses generated can be tested and refined by reference to contrasting cases. The
method ‘incorporated systematic interviewing and use of a variety of national accounts
and historical and political data’ (Walton, 1973: 181).

Non-probability samples involve the researcher using his or her judgment to achieve a
particular purpose, and for this reason are sometimes referred to as purposive samples,
although it is perhaps more useful to restrict the use of the term as indicated below.
Purposive sampling --- the principle of selection in purposive sampling is the
researcher’s judgment as to typically or interest. A sample is built up which enables the
researcher to satisfy her/his specific needs in a project. For example, researchers
following the ‘grounded theory’ approach (Glaser and Strauss, 1967; Strauss, 1987)
carry out initial sampling, and from analysis of the results extend the sample in ways
guided by their emerging theory (this is sometimes referred to as ‘theoretical sampling’).
The rationale of such an approach is very different from statistical generalisation from
sample to population. It is an approach commonly used within case studies (Robson, 1993).

**Selecting the institutions**

In order to make the inner contextual and comparative analysis work effectively I initially approached six institutions. However, selection was not as simple as initially expected. As for the Japanese universities, I initially approached a different private university, which is often described as the counterpart/rival university of Waseda University. Although I interviewed two academics from this university, I encountered difficulties to obtain further contacts. Initially this seemed a major setback in that the university was considered one of the most advanced high-tech university, however, it seemed that the uptake of e-learning was far behind expectations and therefore the development of e-learning was too premature to see the whole picture of the institution-wide process. As soon as I realized this, I contacted Waseda University. By 2000, Waseda University stood as the most advanced university in the uptake of ICTs for teaching and learning, and obtaining the access to relevant people was easier than the previous one. In a way, their successful implementation of e-learning helped me to investigate their case to a great deal because not all, but most of the academics, were more willing to talk about their own interesting experiences regarding e-learning initiatives. Also, the university has a reputation for its unique culture of openness and freedom, which is rather rare for a Japanese institution. This culture certainly facilitated the interviews with them.

As for the state sector in Japan, it became obvious that Kyoto University is the most frequent user of SCS out of all institutions which are equipped with it, which influenced my decision to conduct my empirical study there. However, the state sector is much more closed in some respects than the private sector. Through a special arrangement made by the head of administrative sector, I was able to conduct initial interviews. However, this was all very time consuming in that the process of agreeing access was a
bureaucratic one which could not be hurried along. The interview itinerary was set very precisely and accompanied by multiple bureaucrats on the scene of interviews. In order to get around the potential constraints this might have on interviewees responding freely I subsequently followed up the arranged interviews through personal contacts in order to conduct proper interviews. Surprisingly, contrary to the public documents issued by the government, academics at Kyoto University did not have recognition that they were the most frequent users of SCS.

As for Scottish cases, the UoE was chosen because they present distinctive institutional culture of an old, traditional, research-oriented and autonomous institution. The culture appeared to prevent the institution from imposing a top-down approach towards e-learning and this was a good context to examine a bottom-up approach to e-learning. Also, investigating the UoE was a convenient choice for the researcher considering it would be easier to obtain access since this research thesis belongs to the institution. As for the selection of the institution to represent a ‘new’, ‘innovative’, ‘teaching-oriented’ university with top-down management, a different institution was initially explored. However, after conducting an initial interview with the director of learning technology centre, I realized that their initiatives of e-learning were not institution-wide. As an alternative I visited Robert Gordon University because of their reputation regarding e-learning initiatives from colleagues and confirming that they had institution-wide projects through their Homepages, newspaper articles and some journal articles. After initial meetings with the people from central services linked with e-learning, the fact that they appeared to be adopting a distinctive top-down approach towards e-learning, made me decide to select this institution.

The four cases show distinctive characteristics as institutions and the selection of them is aimed to maximise contrasts in terms of the institutional culture and the approaches to e-learning initiatives as the figure 6 shows. The core framework of the study has three dimensions; 1) to contrast distinct national cultures, 2) to see the contrast of institutional
culture (the state vs. the private and the traditional vs. the innovative), 3) to highlight the contrast between top-down and bottom-up approaches towards e-learning initiatives. This is complicated but a thorough examination of differences and similarities allows us to capture the dynamics and complexity of e-learning developments within university settings. In order to achieve this, the researcher’s control over the selection of the institutions is of critical importance. Until the researcher visits each institution and conducts an initial appraisal, i.e., informal meetings to obtain information and relevant documentation regarding the current extent of e-learning initiatives. In addition, accessibility of relevant people is also another important factor in selection. In some cases, institutions/ key academics can be more wary of being accessed by outsiders. Within a limited time framework, relatively easy access is essential. Consequently, the four institutions – The University of Edinburgh, Robert Gordon University, Kyoto University and Waseda University met my criteria.

For example, at the national level of comparison, the University of Edinburgh which is old, traditional, research-oriented institution with the newly established progressive one, Robert Gordon University in Aberdeen, which has employed a typical top-down management and been keen on developing institution-wide e-learning under a university strategy. Meanwhile, Kyoto University, which is one of the top national universities in

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**Figure 7 Sectoral differences amongst the case studies**

- Old/traditional
- Research-oriented
- More autonomy
- More bottom-up

- New/innovative
- More teaching-centred
- Top-down/ institution-wide initiatives
- Distance learning

- Private
- More autonomy
- Corporation model
- Top-down but relatively loose

- State
- intervention from the State
- More autonomy
Japan and was more strongly steered in its approach to e-learning by the government, is compared with the private Waseda University, which has been exploring various opportunities to develop e-learning initiatives under an ambitious strategy. What are observed through the comparison between the two Japanese universities are the differences between private and national/public universities in the ways of developing and implementing e-learning.

**Primary sources of data - semi-structured interview**

As a main source of data for the study, semi-structured in-depth tape-recorded interviews were deployed. All of the respondents agreed to the interviews being recorded and their anonymity was assured as far as possible. All of the interviews were transcribed. Questions were broadly standardised across the institutions and countries to cover the same themes and issues but flexible in terms of allowing specific issues and interests to be followed. The preparation of a loose set of questions (see appendix one) helps the interviewer to refrain from imposing assumptions in the interview and therefore allowing the interviewee to identify key issues and concerns. The nature of the interview was more exploratory to find out what is happening, to seek new insights and to assess phenomena through comparative analysis. Each case study is aimed to portray the scenes around e-learning initiatives. Essentially, interview data to support the case is also descriptive so that the data can depict an accurate profile of persons, events or situations.

The interviews explore interviewees’ experiences in the use of ICTs for teaching and learning and the on-going projects and future prospectus for e-learning, their pedagogical view of e-learning and the perception of their institutional culture in developing it. Also, their relationships with other academics or relevant university staff and central services were explored. In particular, through the interviews, the fluid relationship of top-down and bottom-up approach towards e-learning within a certain institutional framework and the influence of the culture of the institutions as well as individual academic units over the development of e-learning were of particular interest.
In total, 48 interviews were conducted and 25 interviews were selected for this study: 5 from Waseda University, 8 from the University of Edinburgh, 5 from Kyoto University plus 2 from national media institute, 5 from Robert Gordon University. The interviews took approximately from one to two hours but sometimes I returned to gather more information from the interviewee where it seemed particularly helpful to follow up on the data from the initial interview. Also in the Japanese context I had to arrange additional interviews outside of the formal arrangements that had been made. For example, in the state sector the 5 individuals interviewed where re-interviewed informally. The total number of interviews and interview hours are therefore much greater than the sample of 25 interviews indicates. The individuals interviewed were selected for a number of reasons:

1. Academics/ project leaders
2. Technical supporters/ computer officers
3. Directors/ key staff of universities’ central services

Interviewees were visited on an iterative basis between 2001 and 2004. The informants were selected because they were perceived as taking lead positions in their organisation, lead positions in the change process, or as being perceived as significantly affected by the change. Informants ranged from the heads of central services, academics and technical officers.

Issues of access – difficulties and the processes

Obtaining access to relevant people in Japan was initially extremely difficult. Initial contacts with academics via e-mail were ignored. However, after obtaining a contact of the former telecom president, my access to relevant people increased by a snowballing effect. It shows an interesting aspect of the current Japanese universities that are keen on employing people with a background of working for former telecom industries. Through the telecom-related network, I finally accessed academics who were involved in e-learning initiatives for the private university. As for a state sector, I fortunately had the
opportunity to meet the head of the administrative sector and the Principal at a conference held at the UoE. This contact greatly helped me to establish contact with academics in University of Kyoto. Japanese institutions are much more closed and my experience tells that it is extremely crucial to have good contacts with established authorities to conduct field work in Japan.

One of the potential problems of contacting individuals through established channels of authority is that the potential interviewee may feel wary about speaking openly. To overcome this I had several meetings to gain their trust and to provide them with a sense of security in that anything they told me would be held confidentially. It is difficult to know for sure but I believe this helped interviewees relax and I eventually succeeded in eliciting more personal (rather than official) accounts of patterns of development. This was rather time-consuming but it led me to see what was happening inside the university to a much greater degree.

The individuals who agreed to be interviewed cannot be regarded as entirely representative of the Universities in my sample. They were chosen because they had some particular acknowledged expertise and experience with e-learning. However, few of these were in senior management positions which might have yielded different kinds of findings. One issue in this was that it is extremely difficult to access people in Japan in senior management positions, although this is not a particular problem in the UK. It seemed more useful therefore to concentrate on a more broadly similar group of people within the institutions rather than having a skewed sample in the Scottish universities compared with the Japanese ones. However, I still believe that the top-down management people’s positions, attitudes and views towards e-learning were projected to a certain degree through the interviews with academics and internal policy documents and policy developments.

Secondary data sources
In addition to the above, a number of secondary data sources were used to gather information and to corroborate the interview data where it was feasible and helpful. The secondary sources ranging from institutional documents such as strategy ones, bulletins of staff meetings for e-learning initiatives and project reports to the policy documents and official statistical survey data regarding e-learning issued by the government or transnational organisation were gathered. Additional evidence was also collected from internal reports, newsletters, and articles from newspapers and published academic papers. Furthermore, websites, some on-demand courses and videotapes of lectures using video-conferencing provided additional secondary data sources which have proved to be very useful.

**Data analysis**

The data analysis followed a very simple but systematic process. All of the interviews were transcribed and the responses to standard questions were grouped and coded within the sample of respondents in each separate institution. This made the process of comparison manageable and identification of themes reasonably easy to undertake. The different comments were coded so that the identity of the responses was known. In addition, the further and more detailed comments that were made were grouped in relation to common themes e.g. curriculum issues, marketing issues, technical issues etc and a rather miscellaneous list of further points were identified as well.

The grouping of responses according to questions and common issues (along with the additional points) was used to write up a case study of each institution. These accounts of the inner context were reinforced and checked with data from the secondary sources so that a reasonably accurate account seemed to be constructed that took into account interview data and secondary sources. The written up case study accounts were then systematically compared within each country and then across the two countries. The process of analysis is evident in chapter ten.
Identifying commonality and idiosyncrasy are referred back to their historical, geographical, political, cultural, pedagogical and social backgrounds.

One issue important to reflect on in relation to data analysis is the problem of translation. In a most obvious way, the languages of the two countries are differentiated in lexical terms. Some concepts may be 'lost in translation' or not be sufficiently translatable on certain occasions. As Elder (1973) argues, the process of explaining in another language can be so laborious that the effort may be abandoned. In order to avoid capturing the subtlety of languages, the basic interview questions are prepared to standardise them to some extent while allowing maximum opportunity for interviewees to express what they feel or think in an open-end way. The translated transcripts of interview data in Japan were also thoroughly checked by a qualified English teacher.

It is also important to refer to language differences at a micro/local level. According to Anderson and Bruce (1967: 124), ‘[t]ranslation is involved whenever research requires asking the ‘same’ question of people with different backgrounds’. This was true in that people speak in a certain way which is identified by their professional occupation and positions in a certain organisation. For instance, learning technology officers often work as a mediator between academics and technologists or engineers to interpret both professional languages. Thus, language should also be perceived a clue to understand how their professional identity is reflected upon the developmental processes of e-learning.

Limitations of this study
No methodological approach and deployment of research instruments are without their limitations so it is necessary, particularly in a complex comparative study, to outline the potential bias and distorting effects which might occur in the design and data gathering process of this study.
There are few social science approaches which today would claim objectivity in the sense of being completely free of bias in the process of data gathering. However, this does not minimise the need to see how and where this might occur and what impact it might have on the interpretation of the findings of the study. The first problem of in-depth case studies is one of establishing the reliability of the account in that it is difficult to know the extent to which the account has validity. Falsifiability criteria are, therefore, difficult to meet, and generalisation is impossible (Stoevker, 1991). Indeed, there is no way to measure external validity. Another problem is the threat of researcher ‘bias’ and it assumed impact on internal validity. Case study research has no built-in corrective against the researcher’s possible biases, i.e., it does not accurately measure variables, and relies on retrospective reports. In general, the charge is that the case study suffers from a lack of rigour and an excess of bias. One useful measure is to minimize the limitation is the use of multiple methods, continual data collection, comparative testing with theoretical propositions and case comparison.

Kennedy (1979) argues that generalisability is not dependent on the number of units observed but also on the kind of units observed. It applies accurately to similar situations, depending upon a comparison of competing explanations and precise description. This study does not aim to produce generalisation since it does not use any scientific basis to generalise beyond the case. Also, Bryman (1990) argues that pointing out the limited generalisability of case study fundamentally fails to understand the nature of case study research. Yin (1984) argues that case studies should be evaluated in terms of the adequacy of the theoretical inferences that are generated. In justifying the case study research, we need to consider four issues, i.e. the role of theory, the historical perspective, the multi-methodological approach, and the researcher’s role. Therefore, the study and its analysis is backed up by the theory, to see how the real world can fit to the information society theories and globalisation discourse.

**Multiple standardised cross-national/cross-cultural case studies**
A very common misconception is that conducting multiple case studies is for the purpose of gathering a ‘sample’ of cases so that generalisation to some population might be made. The activity of multiple case studies is not concerned with statistical generalisation but with analytic generalisation (Robson, 2001). Many examples of case study research focus upon two or more sites. The reasons for including a second or more case are usually twofold; the generalisability of the research may be enhanced, and comparisons allow the special features of cases to be identified much more readily. The contrast between the two organisations allows researchers to draw out some important themes regarding the environmental and internal organisational factors that are likely to promote regulation (Bryman, 1990). There are some more extreme cases. For example, Yin (1979) examined innovation conducting nineteen case studies. However, the distinctiveness of the case study approach becomes questionable, especially since the emphasis on the unique context that is a feature of the case study is easily lost (Bryman, 1990).

The study of four institutions allows the different organizational consequences of the introduction of ICTs to be identified. The researcher identifies one or more individuals from the population of interest. After they have been interviewed, they are used as informants to identify other members of the population, who are themselves used as informants, and so on. This is a useful approach when there is difficulty in identifying members of the population, e.g. when this is a clandestine group. It can be seen as a particular type of purposive sample (Robson, 2001).

Gallie (1978) uses a research which is deliberately constructed to facilitate the testing of a theoretical proposition. In this example, a logic of comparison is built into the design. Further consideration of the theoretical arguments led him to the view that the basic explanatory assumptions of these theories might be fundamentally flawed and that an alternative view of the implications of automation would be worth considering. In order to test this hypothesis, Gallie adopted a cross-cultural research strategy and set out ‘to
examine the implications of advanced technology in two societies – France and Britain’ (1978: 37). The design was governed by three requirements: similarity of technology; regional diversity; and institutional systems that were capable of close comparison (Rose, 1991). The aim is not to ‘infer the findings from a sample to a population, but to engender patterns and linkages of theoretical importance’ (Bryman, 1990: 173). Yin (1984) argues that the theory should be tested in comparable contexts to see whether it fits other cases; if it does not, it is likely that the conditions under which the theory operates will need to be specified more precisely.

**Ethics of research**

Ethical considerations are an important part of field research since ethical issues permeate every aspect of the field research process, from selecting the research topic to disseminating the results (Bailey, 1996). There are some warnings about access issues. Berg (1995: 200) comments that some researchers may ‘violate some tenet of ethics for being eager to gain access to some population without realizing by manipulating subjects to take part in a study or subtle invasions of privacy in their less experienced years’. Although the topic of this study is not particularly sensitive, a great deal of consideration was paid to protect the participants’ privacy and ethical codes as a researcher.

In particular, the issue of informed consent is an important component of ethical research on any human-related subjects. For the field work of the study, before conducting an interview, all interviewees were contacted via email to explain the nature of the study and my intention of conducting interview with each briefly. Following this, a meeting was arranged to explain the nature of the study in a face-to-face situation. During this process, confidentiality was referred to, and the permissions of recoding the interviews and the use of the data for the thesis were obtained. In some cases, several visits were required to break the iceberg before conducting interviews. Also, in a few cases of Japan, recording permission was not obtained. In those cases, taking notes were allowed. Based on the rough immediate transcription notes, some sentences were incorporated into the
case study without risking fabrication or manipulation of the original data. After these procedures, interviews were conducted. Interviewees were allowed to refuse to comment on something they felt uncomfortable to answer freely. Every time each interview was completed, it was confirmed about whether the overall contents did not break interviewees' privacy and ethical codes.

As a measure of protecting interviewees' privacy, confidentiality was guaranteed. Bailey (1996) clarifies the distinction between confidentiality and anonymity. Anonymity means the researcher is not able to identify the participants in the study while a confidential study allows the researcher to know or identify the participants but does not reveal who they are. In this study, the names of the participants are protected under anonymity, but the institutions, the position and the units which they belong to are uncovered. In this sense, a very strict confidentiality is not possible. However, the study requires the nature and culture of institutions, academic units, professional occupation/status to come to the surface for further analysis. These issues were explained to each interviewee beforehand.

**Conclusion**

The proof of any methodological approach is probably in the results it obtains rather than in the perfectibility of particular research methods. It is, however, important to be transparent and clear about the limitations that arise from the approach taken. This study is in some respects unique in that the opportunity for comparative research between two similar yet very different contexts can yield some surprising and informative data for analysis. The cross-country and comparative case study approach creates a depth of analysis which is relevant to the central thesis of this study. It may therefore have limits but it derives logically from the concerns of its object of study.
Part Two

Case Studies
Introduction to the case studies

The purpose of this introduction is to signpost some of the issues that are dealt with in more detail in the case studies that follow. These comprise four chapters which examine two case studies in Japan and another two in Scotland respectively. The term e-learning is vague and ambiguous in that it can refer to a diversity of technological forms as well as distinctively different learning and teaching processes. The relationship between the technology and the pedagogy is a central issue and one in which a number of issues in the development and deployment of e-learning occur. Each case study illustrates this diversity in different higher education settings. In chapter nine, following the case studies, a systematic analysis of intra-sectoral and cross-national comparisons is undertaken. In each nation, two contrasting institutions in terms of history, cultures and position in higher education were selected to highlight diversity within different national contexts. This intra-sectoral comparison (‘old’ and ‘new’ in Scotland / private and public in Japan) focuses on different responses within the same national context whilst also helping to identify the influence of national culture on developments. Through these comparisons, the study aims to address distinct patterns of response to broader issues of globalisation and the influence of policy in each national context.

The first two chapters examine the Japanese universities which have distinctive institutional cultures and very different patterns of responses to e-learning. The state national university is, broadly speaking, relatively less enthusiastic in its take up of e-learning whereas the more entrepreneurial private university is clearly more active in this sector. Whilst this is partly to be explained by global forces, institutional cultures and purposes, it is also strongly influenced by government policy. Chapter five looks at the case of a national university, Kyoto University, which developed e-learning through the Satellite Collaboration System (SCS) initiated by governmental policy to realise ‘networked classes’ amongst universities using the same technology infrastructure. The vision of ‘networked universities’ using satellite technology was encouraged by
government policy and was amply resourced by them free of charge in the state sector. So if inadequate resourcing was not a key issue why did academics react to this development less than enthusiastically? Was it to do with hostility to technological innovation from academic luddites? Kyoto is one of the elite universities in Japan, so was it the result of a residual institutional inertia in the face of change? Was the lack of familiarity with technology the deciding factor? The argument of this chapter is that the answer is to be found in the processes of change as much, if not more, than it is to do with institutional status, technological forms and academic attitudes to e-learning. What is examined in this chapter is to what extent the top-down approach towards e-learning at governmental level is effective in the process of implementation of e-learning at a university. Can the system which did not incorporate the views of users, i.e., academics in the process of development, be developed across the university? If not, how and why? One of the key issues in change is also the importance of institutional identity. This is evident in the account of the development of Kyoto consortium. This consortium aimed to develop networked classes amongst a number of higher education providers in the Kyoto region. However, ‘networking’ or ‘being connected’ with other institutions is not easy and neither is it necessarily beneficial to all involved. If networking reaffirms institutional identities it is more likely to be embraced than if it threatens or challenges them.

In contrast chapter six examines the private Waseda University. Like many private universities placed in a competitive market, Waseda University is characterised by its entrepreneurial attempts to develop e-learning. The impact of globalising processes and the threats and opportunities it poses are evident in shaping the e-learning strategies it has developed. The main approach taken has been through a ‘consortium’ with other higher education providers (in and outside Japan) as well as with industrial and commercial sectors. The ambitious university e-learning strategy devolves autonomy and responsibility to individual academic units to establish new forms of partnerships with other universities as well as large private corporations. This process has created a good
degree of flexibility which has enabled academics to explore different forms of e-learning which suite their pedagogical needs and satisfy the interests of sponsors in the consortium. However, the pattern of development is uneven across the university and this has to be explained by the interest of consortium partners in specific academic areas – primarily those which are commercially viable. This is also true for those academic units which can fit into the university’s vision regarding globalisation and develop a certain form of e-learning while others cannot. Overall, the argument of this chapter is the emerging diversity of forms of e-learning and unevenness of e-learning across the institution is a result of institutional purposes and competitive pressures.

Chapter seven looks at the case of University of Edinburgh (UoE) as an example of an ‘old’ university. The pattern of development of e-learning at the UoE has been uneven with some highly sophisticated and widespread use of e-learning in certain academic sectors, isolated examples of development in others and nothing in other areas. The research-led focus of the institution has perhaps shaped its approach to ICTs in the area of teaching and learning in that research ratings have higher status and professional rewards for departments and academics. Unless specifically prioritised, therefore, e-learning can easily be marginalised. The process of change is mixed – bottom-up approaches in some departments and a top-down approach in one (of the three) Colleges in the University. In this laissez-faire policy context (now significantly changing with the arrival of a new Principal in 2002) the pattern of development is driven by the enthusiasm of some academics and technical officers trying to create effective teaching and learning with ICTs. In an environment in which there was no university e-learning strategy and a great deal of autonomy, there is no standardised ICT development in e-learning. This may be beneficial from a pedagogical perspective, but these bottom-up projects are small scale and remain academically localised. It can also potentially be a waste of resource and labour in terms of duplicating projects across the institution. The chapter highlights the marginal status of e-learning, issues in raising its status and appeal and its fragmented development. Following this, the chapter highlights the problematic
issue of institution-wide e-learning initiatives in relation to processes of governance at the university.

Chapter eight examines Robert Gordon University (RGU) as an example of a ‘new’ university with a vigorous commitment to e-learning. The development of this sector is seen to be highly important to the institution in the global market for students. By introducing a university e-learning strategy, RGU effectively adopted a top-down approach for on-campus as well as distance learning. Their vocationally-oriented programmes and courses are delivered via ICTs nationally as well as globally. Their approach has been successful in launching more e-learning courses while diffusing certain Visual Learning Environments (VLEs) across the institution for on-campus study. However, some problems are now emerging in integrating the existing e-learning systems. The chapter shows the merger of the systems creates tensions between pedagogical concerns, technologies and management interests in institutional efficiency.

Four very different case studies which, taken together, provide insights into the diversity and richness of institutional cultures, patterns of governance, forms of e-learning and distinctly different processes of change. Whilst all of these cases have to be situated in a similar context of global change and competition we see in the patterns of development and deployment of ICTs distinctly divergent outcomes and issues. This underlines the fact that whilst there are similar pressures for change the choices and courses of development and deployment in e-learning in higher education are likely to be highly dissimilar.
Chapter Five

Changing pattern of reactions to e-learning: 
The experience of Kyoto University

Introduction

In terms of McNays' (1995) categories Kyoto University is a hybrid of the collegial-bureaucratic model which is typical of state universities in Japan. Traditionally this meant a good deal of academic autonomy (cf. Section three in Chapter three) and consensual processes of decision making coupled with rule-governed systems and policies which provide a framework for autonomy to operate within. During the late 1990s Kyoto like other state universities was expected to participate in the government initiated satellite technology mode of e-learning (described below). This ‘top down’ initiative was not enthusiastically received amongst Kyoto’s academics. Their reaction to this technology and the process of its development and deployment is the main focus of this chapter.

The other main contextual shift that needs to be taken into account is in relation to market pressures. Kyoto University is undergoing change in the direction of a more entrepreneurial mode of organisation. Since the Second World War universities in Japan have changed in structure without any major reform of their mode of operation (c.f. Altbach and Ogawa, 2002). National universities were always financially under the protection of the government since budget and resources were automatically provided. Universities, in the state sector are now facing fundamental reorganisation. The prolonged economic stagnation since the 1990s has led the state’s budget for national universities to tighten and the government introduced in 2004 the incorporation systems to promote self-supporting systems and to break down the rather conservative attitudes of the university sector as a whole. Also, the government has now started to introduce the agent system called ‘top-30’ by following the US and the UK systems. This system
directly drives national universities into the competition with private universities. By introducing competitive principles into the field of higher education, the government hopes to bring about efficiency in terms of funding and a rise in the standard of research and teaching. In the processes of this radical shift, the uptake of ICTs for teaching and learning as well as research has been developed in the state sector.

E-learning in the state sector developed very differently from that of the private universities. National universities were equipped with the Satellite Collaboration System (SCS), introduced by the governmental research institution, the National Institute of Media Education (NIME). This unit was established in 1978 as an institute for the collaborative use of information technology by national universities. NIME has a great deal of experience in developing, managing and distributing innovative educational technologies and works with the Ministry of Education so that it can take the lead in the development and implementation of e-learning and other multimedia technologies for the public sector universities. NIME focuses on the research and development of educational methods, implementing ICTs, and disseminates its findings to higher education institutions. One of its aims is to achieve networked classes mainly among national universities and promote workshops among academics with interactive synchronicity by connecting multiple institutions using SCS.

In this case study two main processes of development can be identified. The first is one largely of (passive) resistance to the implementation of the SCS system – or, at least, an unenthusiastic reception to their introduction amongst most (but not all) academics. This pattern of response seems to have been the case partly because of the way the system developed. The ‘top down’ decision to use SCS was driven by government priorities rather than those of academic units at Kyoto. The needs of academics were, therefore, marginal to the process of introducing this technology with the result that it was largely under-used. Partly it is also a product of the limitations of the technology. Whilst SCS facilitated some forms of networked classes to occur it is less flexible than, for example,
the Internet. The second main process of development occurs with the introduction of the Kyoto consortium. This initiative was driven by local industries linked with higher education providers in the west of Japan. What is interesting is that Kyoto University has only participated in this development in a very limited way. Academics have tended to resist the expansion of their courses through participation in the consortium. They have argued that their involvement in the network would dilute the educational experience by making too many demands on staff. Instead of seeing networked classes as an opportunity, in this case, they are reconstructed as a problem for higher education. In contrast to this overall lack of enthusiasm for the SCS and networked classes, the contrary pattern seems to occur in relation to distance learning. E-learning in this context is enthusiastically developed which lends support to the argument that the general pattern of resistance is not driven by hostile attitudes to e-learning as such. When integrated with appropriate pedagogical interests, ICTs were embraced by this academic unit.

Background to developments

Kyoto University is one of the top traditional national universities founded in 1897 as Kyoto Imperial University. Kyoto University is often seen academically as a rival of the prestigious Tokyo University. As of 2000, Kyoto University had ten Faculties, fourteen Graduate Schools, thirteen Research Institutes, and seventeen Research and Educational Centres. Kyoto and has been recognized as one of the top-users of SCS out of all the national universities. This system has been the main tool for e-learning among Japanese national universities since its launch in 1996. This very ambitious national project is a reflection of the country's competitiveness in the technology-related domains, in particular satellite technologies.

The inspiration for SCS drew on US experiences of deploying satellite technology in

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8 Its rivalry institution, Tokyo University may be more renounced for its high status. However, Kyoto University is also nationally recognized as one of the top national universities. The university has
universities rather than arriving out of the particular experiences and interests of academics in Japan. For example, foreseeing the decreasing number of potential students in the early 1980s, the State of California introduced the California Virtual Campus – linked by satellite technology - which around three hundred national, public and private (junior) colleges and universities joined. Later the Pennsylvania Virtual Community College Consortium was established with 15 institutions in order to exchange their courses using a satellite network. Japan, which had similar demographic problems, also started to look for a way to develop networked universities and this came to be realized through SCS for national universities. In terms of national information infrastructure, Japan was behind other developed countries in the 1990s. Before 2002/3 broadband or ISDN were not widely diffused in higher educational institutions or in public households. In order to provide stable networks, the Japanese government decided to invest in satellite technology to promote ICTs in higher education.

The SCS began with 51 sites in 37 institutions in 1996. Since then the number of institutions participating has increased each year: by the end of 1999, 143 sites in 120 institutions were connected, including 13 sites in 12 private universities and 1 site in the University of the Air. According to the survey in 1999, SCS was used 1300 times in one year (1998) for approximately 3000 hours. Whilst this may seem quite substantial, considering that 120 institutions were involved the reality is that the technology was used very modestly. As the figure below shows, SCS was used mainly to exchange lectures or seminars.

produced four Nobel Prize winners in the past.
SCS allows *multiple* institutions to connect synchronically and exchange lectures, research workshops, conferences and symposia. It mainly consists of two sections - a central station (the HUB) to control and monitor the entire network installed in NIME, and stations at individual institutions. NIME operates the central station which controls the other stations set up in universities and colleges. Specialists in NIME centrally control the transmissions by satellite whilst academics operate it locally through the commands of touch-panel monitors located in their institutions. This left the complicated satellite operations in the hands of technical experts.

To allow all universities to use the satellite system all the national universities were equipped with stations with equal technical capabilities. This achieves the requirement for synchronic interactivity (see chapter 3) which attempts to approximate towards face-to-face communication. In this case, however, it is achieved simultaneously across a large number of institutions. Through the use of this system, even large scale symposia (more than 100 stations can participate in an activity) as well as networked classes connecting multiple points can be achieved. As far as the quality of the network is concerned, a signal speed of 1.5Mbps was selected because it provides sufficient image quality for an educational exchange and keeps the operation costs economical. NIME also has mobile stations to reach wider areas and remove geographical constraints as an
obstacle to participation. Parallel to this development, the government also issued White Papers, recommendations, and regulations regarding multimedia education. For example, in the Programme for Educational Reform issued by the Ministry of Education in April 1998, more advanced use of multimedia was recommended in higher education, with a special focus on the following two activities: (1) the promotion of networking by means of SCS and (2) research and development on educational content and methods, and the dissemination of research findings and developments at NIME to institutes of higher education throughout the country.

The University Council published ‘A Vision for Universities in the 21st Century: Reform Measures for Distinction in a Competitive Environment’ (1998), in which they refer to the usefulness of ICTs and multimedia for the enrichment of higher education, and also the need for further studies on the virtual university. Furthermore, deregulation of university credits by distance education has stimulated the deployment of ICTs. The maximum number of academic credits able to be earned via distance learning using ICTs was 30 out of 124, and this was expanded to 60 in 2001. In 2003 obtaining full credits by distance learning was accepted. During these deregulations, the focus of the debate was on the concept of ‘interactivity’. Synchronized interactive communication, to bring about almost the same quality as that of face-to-face communication, was a prerequisite for accredited e-learning until 1999. This restricted definition of ‘interactivity’ has influenced the choice of technological forms for e-learning in Japan. However, after 2002, asynchronized interactive communication via e-mail, bulletin board and computer conferencing was accepted as long as it still preserved some of the same quality of interactive communication as face-to-face ones. This deregulation of interactivity in e-learning allows universities to embark on Web-based teaching (WBT) including full on-demand courses, which are mainly witnessed among private universities. In spite of these radical changes in the regulation of e-learning, SCS remains the main technological form used among national universities.
Technology before pedagogy

The SCS is an example of e-learning led initially, at least, by technological values rather than pedagogical ones. This ‘technology-push’ development is neither new nor peculiar only to Japan (c.f. Webster and Robins, 1987 for the British case.). Nevertheless, what is distinctively different from other countries is the missing concept of ‘pedagogy’ in the process of development of e-learning in Japan. A former visiting professor in NIME in 2001 makes an interesting comment on the uptake of new technologies for teaching and learning in Japanese higher education when he states:

"Japan is a country that has a strong technology base, yet it is surprising that in education it has such a conservative outlook. If technology is not immediately successful and it proves difficult to use, yet it is evident that it has potential, we should study carefully how it works in teaching and learning in pilot applications. Successful use of a technology depends on the ability of both the teacher and the students to be motivated to use it. Strangely Japanese teachers have some difficulty in understanding the idea of applying technology to education and they are unfamiliar with the word ‘pedagogy’ (Jameson, 2002: 38-39)."

The lack of pedagogical discussion in the development of learning technologies is also evident in the developmental stages of SCS. Tracing how the system was designed and developed provides us with a better understanding of why it was not well accepted by academics. The main people involved in its development had backgrounds in satellite engineering rather than expertise in pedagogical issues.

The origin of SCS is rooted in the series of experiments conducted by the National Space Development Agency of Japan. The concept of an inter-university satellite system came from this. The SCS project ultimately obtained £25 million pounds for the development from the government in the then-favourable economy. The network started with 51 hubs and rapidly expanded to 150 within a few years of the start of the project. This rapid expansion among national universities was largely attributed to the power of the government rather than demand from academics, since SCS was installed in national
universities almost all at once by a top-down decision. Whilst it meant a real possibility of developing a meaningful network, the issues which preoccupied the developers were couched in technical terms. One possible major problem was foreseen. The director said:

If there is one enthusiastic person at university, it is all right, but there are not necessarily such people at all universities and I knew there was a limit to what I could do alone. These experiences enabled me to think about the necessity of developing an automatic satellite system.

The lack of enthusiasm amongst academics was defined as a technical issue to be resolved through an automated application. This ‘technical fix’ solution is not something new (cf. ‘Technical-fix’ in education by Webster and Robins, 1989). The assumption made at this stage of the development of SCS was that technical simplicity through automation would lead to frequent use. However, in the process of defining the problem there was one missing entity – the voice of the users, namely academics. Despite several meetings between the developers and academics, the opinions of academics were marginal to the system’s design. It is not surprising, therefore, that SCS was not welcomed as its designer explains:

My concept of SCS was totally rejected by them. Some people had skeptical ideas about so-called distance learning, being mainly about broadcasting lectures. Also, at that time, most academics believed that it was nonsense to expect them to handle or operate technology. So, when I first visited some universities for a pilot study of SCS at a university, I was scolded by professors. They claimed that it was engineers who dealt with technology operations, and definitely not them. But personally I didn’t accept the dichotomy of engineers and academics in education using technology...I decided to push my idea ahead in spite of the strong oppositions from university teachers... Basically, I didn’t have meetings with university teachers regarding the development of SCS at all. I’m on the engineering side. If there are any problems with the system, I think about how I can improve things technically.

Moreover, the SCS had inherent rigidities which were problematic from a pedagogical
perspective. For example, it is useful in terms of providing conventional, teacher-centred lectures which can go beyond the campus connecting multiple institutions. It can therefore enable mass lecturing but it is largely dependent on this mode of teaching to be effective. This could be interpreted as a limited way of using ICTs and developing networks. Also in addition to the teacher focus the system is rigid in terms of requiring students to attend specific sites to receive the transmission. In order to participate in the networked classes, students physically have to locate themselves in a campus with SCS facilities. It is not a system that emancipates teaching and learning from time and space constraints. This bounded or limited networking makes a contrast to the one via the Internet which does away with these constraints. SCS simply allows academics to extend their regular lectures/seminars beyond the campus within the connected network.

Nothing can be better than face to face education – one-to-one, one to 10 or 20, it doesn’t matter. Flexible interaction with the observation of our listeners or speakers, which allows us to change the pace of our conversation, is important. The way we have to direct is how we can realize this environment if actual face-to-face communication is not available or convenient, and if there are any problems in the realization of this environment, what we have to do is to improve the situation. ... If the Internet allows us to communicate via virtual face-to-face with interaction, then we can go for it. People are using SCS simply because the Internet did not guarantee stable broadcasting. Well, it is true SCS started to be overtaken by the Internet. It is impossible to cover all the possible functions using SCS. SCS is only a tool. The point is whether there are any enthusiastic academic staff at the university, I think. This certainly affects the way SCS is implemented for teaching and learning at university.

As the above comments show, the vision of teaching and learning is the reproduction or extension of conventional face-to-face lectures. In order to achieve this, SCS is depicted merely as a technological tool which is ‘neutral without valuative content of its own’ (cf. Feenberg 1991: 6). But in limiting teaching and learning to particular pedagogical forms the technology reinforces assumptions about the nature of this process as unproblematic.
Getting connected - problems in networking

New technologies are seen as a means for developing networks across institutional and national boundaries. However, not all ICTs have the same capacity for achieving this. Getting connected in a network is not as straightforward as it may seem nor are they necessarily open in terms of easy access to join a network. Moreover, it is often assumed - wrongly - that there are benefits to being connected into the network. Developing a network is not easily achieved across institutions which have different patterns of organisation, timing and running of classes. The SCS was designed to link different nodes in a network but with little real consideration of the complex nature of university organisation. Some of the key issues that were experienced are identified below.

The passive resistance to using SCS suggested in the low level of usage (see figure 8 below) was compounded by some of the difficulties faced by academics wanting to use it. In a way, Kyoto University is an example of a context where the system – if it was going to work anywhere – would work here. The technological infrastructure was in place since 1997. It had installed satellite for distance learning at 20 sites. This followed a national blueprint for successful installation and backed up with ample funding. Approximately half-a million pounds was allocated to Kyoto University. What was lacking was a clear idea of how to use it. The professor of the division of distance education said:

At our university, we were interested in the system, so we started to use it with great curiosity, but hearing stories from other universities, most of them seemed to have felt at a loss. They didn’t know what to do with SCS at first, although everything was provided by the government.

There has been a strong tradition in the uptake of technology in education, in particular, distance education, with some enthusiastic academics who were champions of SCS from the start. The system itself seems to be rather difficult to use in spite of the fact that it has been dramatically improved in terms of its operation, contrary to the
perception of the developer of the system.

It's not as easy to use the system as you might think........ The Ministry of Education has advised individual universities to prepare technical staff for SCS. But most universities don't have any. They don't have time or a budget to employ people for that. Luckily, at our centre, we have always had people who could support these activities. The support centre was established about 6 years ago and since then, I have always thought that we had to provide support in order to promote distance education. In our case, this centre has a division to support distance education, which provides necessary services such as the preparation of the equipment, control/supervision of the operations, securing the connection of the networking, so if academic staff want to use SCS, that is they just come to our centre and they can use SCS very easily because our staff prepare everything necessary for the lecture beforehand. But if they try to do the same thing at their own faculty, in the first place, we have connected our centre to their room and then, we emit the signals of SCS to them. This is quite labour-intensive and they also have to operate another system to conduct distance education apart from the system of SCS. It is definitely not as easy as making a phone call. We have virtually only one or two people who do these jobs, so there is a limitation to the range of the work we can provide.

There are, however, other issues which cannot be dealt with by this unit. These are often not technical problems but more administrative or institutional ones. For example:

Well, in fact, it's not very convenient to use SCS since we need to make a booking for its use, which is actually a bit troublesome since they need to hold the satellite line for each occasion. When we book SCS, ID is given to us. But we have to contact one of the four people in charge. We need to call their office to make a reservation, so basically we cannot make a booking by ourselves. Also, there is no guarantee that we can reserve a room for SCS whenever we want. Even if I wanted to do something with other universities via SCS, I would need to negotiate the time with my partner university and then, we need to secure the room for lectures using SCS at my university as well as at their place on the same time schedule. If we use the Internet, troubles can be minimized. Just plug it in and everything is fine.
Whilst easy access to the system was aimed for, what was not taken into account was the different institutional contexts and administrative systems which might get in the way of networking. Apart from the booking procedure, the professor also pointed out some unexpected hindrances for conducting networked classes as follows:

One of the main purposes for the use of SCS is to conduct distance education linking universities within Japan. But I’ve found one of the most significant problems for this is the incompatibility of time schedule among universities. I have conducted lectures with Tsukuba University at a distance, but our structured timetable is different from theirs, so the starting time and the ending time do not fit each other. Even if I was still in the middle of giving a lecture, some students at Tsukuba would have to leave because they needed to attend another class at their campus. Essentially, I had to stop the lecture because of the interruption (and to be fair to all my students). Also they take three semesters, which starts from April and ends in June, and we adopt a two semester system, which means we finish in the middle of July. Virtually it’s impossible to conduct lectures at distance as a properly accredited course. So, the most we could do is to exchange only a part of our courses at a distance. We cannot encourage our students to take other universities’ courses to get a credit under these circumstances. If we tried to go ahead, we only end up making things even more complicated!

The lack of appropriate institutional settings and lack of flexibility in the technology can hamper exchanging lectures and seminars with other universities. In order to achieve networked classes properly, the standardisation of institutional arrangements such as term systems and time schedule for courses has to be achieved first. SCS can connect multiple nodal points synchronically, but at the same time this means that it can only provide a limited form of networking which is bounded by time and place. This is contrary to what is happening outside of Japan, since most countries see ICTs as medium for more flexible and open forms of learning. Unlike the Internet, networking is achievable within the SCS boundaries, but this means it excludes others, for instance the
majority of private universities without the technological infrastructure to participate.

The lack of enthusiasm for the SCS system has been somewhat offset by the development of on-site technical expertise. In order to handle technological systems as tools, the necessity of establishing support centres within each university has developed. According to the chief director of NIME, Kyoto was well placed in this respect:

The necessity to make use of SCS widely spread across departments (or faculties), universities were encouraged to have their own central sections so that each university could have responsibility for adopting SCS and using it. Those sections could be a media network centre, supercomputer section, information processing division, or education department – it really depended on universities. ... For example, Kyoto University already had a good background in the area of multimedia education and developing presentation systems in education. Since SCS was launched, Kyoto University has been one of the top users.

The Academic Centre for Computing and Media Studies used to be three independent research units which were all integrated and re-established with the latest facilities, equipment and network information infrastructure in April 2002. The Centre has four divisions – Network, Computing, Educational Support System and Digital Contents and deals with various activities such as the development and maintenance of network information infrastructure, distance education, computer assisted language learning (CALL), multimedia course contents, etc., while conducting research in their own domains. Above all, the division of distance education has been played a key role in promoting e-learning using SCS and the Internet. However, a great diversity in the form of e-learning has emerged in recent years since the restructuring of the centre. The percentage use of SCS for specific purposes at Kyoto University is shown in the graph below:
As the above graph shows, the use of SCS for lectures/seminars peaked in 1999. Since then, its use for teaching is decreasing each year with the Internet overtaking it. The following section looks at how the different use of SCS for higher education emerged in this developing market context. After it the next section examines how Kyoto University has been promoting e-learning in their own particular way.

Networks as problems for institutional identity: the experience of the consortium

In the changing economic climate connecting universities more closely with industry and the economy has been a priority for national governments. In Japan one way this has developed has been through the structure of consortia to bring together these different interests. The role of SCS in this has been to link the members of the consortium through networked classes. However, it cannot be assumed that this is necessarily beneficial to all concerned. The reality is that providers of higher education occupy different positions in the market. Kyoto University has an elite status and its qualifications are therefore in demand. Linked into a network it is a nodal point that is attractive because of its exclusiveness. The analogy of a net seems to oversimplify the fact that not all of the
nodal points are of the same material value. Networks may suggest more democratic and horizontal forms of development but this is not necessarily beneficial as the following experience indicates.

The Consortium of Universities in Kyoto was established to promote various activities, such as research projects, information, delivery and exchange of courses, and planning enterprises for life-long education, to improve university education with local communities and industries. The plan of the consortium was drawn up in 1993 and the 'University Centre in Kyoto' was established to initiate exchanging university credits among 15 universities and 13 junior colleges in 1994. In 2001 the consortium began to provide exchanging accredited courses via SCS.

It is only very recently that Kyoto University joined the consortium after a few years of resistance to it. The university eventually signed a contract with the consortium to be a member on the condition that they do not take part in providing any courses. This means that the consortium uses the name of Kyoto University as one of the membership universities but in reality, Kyoto University is resistant to participating in the networked class activities. The professor in the division of distance education at Kyoto University explained this as follows:

Kyoto University refused to join the consortium for a while. However, the criticism from other universities in Kyoto was growing bigger and bigger, saying that it was strange that Kyoto University did not join the University Consortium of 'Kyoto'. So finally, Kyoto University agreed to join the consortium, but under the condition that we do not exchange any lectures at all. There has been strong opposition to the idea of exchanging courses with other universities at our university since we can foresee that a huge number of students from different universities will take our courses and we will end up spending most of our time marking their endless essays/ tests. So we do not participate in lecture-related activities, but attend some other workshops sometimes. Basically there is no benefit to us in joining the consortium.
As market principles begin to shape what universities do, it is not surprising that its logic is also used as a way of resisting unwelcome developments. For academics of Kyoto University, achieving high quality education for their own students is a main priority which distinguishes them from a number of their competitors. Limiting the availability of their courses can be seen as a protective device by academics to secure their relative position. The other side of the argument is that opening up courses to a wider student body might also dilute the educational experience and value of the accredited courses on offer. More time taken up with marking and so on has to have an impact at some point. Mass systems of education may have an undermining impact on the quality of the educational experience.

Even before SCS was introduced to national universities in the 1990s, there was some scepticism about whether top national universities were willing to participate in the activities involved (Interview source of the director of R&D division at NIME). As far as SCS is concerned, Kyoto University has been a relatively enthusiastic participant compared with others, but only when they could choose the partners to link with. Whereas when it comes to the consortium in which there is no room for the participant universities to select their linking partners, Kyoto University has shown strong resistance. In a way, participating in the network of the consortium is the place to re-identify their institutional positions and status.

This issue of institutional identity is not simply a concern of the prestigious universities like Kyoto. For instance, a secretary-general at a small, local, private college, Nagoya Junior College in the West of Japan, provides a similar concern in relation to participating in the consortium. He puts it thus:

We were also asked to join Kyoto Consortium. Our college is not exactly located in Kyoto, but they told us that people might be interested in our regional local culture as a general course and asked
me whether it was possible for us to provide any courses for the Satellite Campus, which is more for evening courses for adults. So we might do this. But in general, it's really difficult to make an affiliated connection with another university or provide our courses at the consortium. Unfortunately, we have to think about the extent to which we can provide interesting courses to other universities. This means our academic staff have to be placed more in the public eye to be assessed by others. ... Also, the partner university wants to make an affiliation with similar institutions in terms of academic level and reputation. We do not want to affiliate with colleges which are far below our standards, but at the same time, we can be embarrassed if we become too ambitious. This is quite a tricky business....

Thus, making a partnership with other institutions for e-learning directly hit the issue of institutional identity. The concept of networked university was supposed to provide an equal environment for e-learning. However, the technological device alone has not activated e-learning. Without taking account of different institutional contexts, the networked university cannot be easily realised because participating in the networking means the opportunity to re-identify their social and institutional values.

SCS was originally designed on the concept of 'networked classes' primarily amongst national universities and some other institutions. Technological settings were ready, however, some more fundamental issues as an organisation/institution has become hindrance for diffusing the system. Also, SCS places restriction on the flexibility of teaching and learning since the system cannot reach individual household, only certain institutions or universities. Without incorporating some systems such as the Internet, SCS cannot provide PowerPoint slides on whiteboard in the front of a lecture room. Thus, various kinds of constraints or limitations gradually lead academics to turn to using the Internet as the information infrastructure in Japan was improved.

**Active engagement in distance learning**

It may seem that this general pattern of passive resistance to engagement with ICTs was
part of an elitist attitude of staff unwilling to interact with the potential pedagogical benefits of new technologies. This would miss the point that is being emphasised here that it is the process of development, and the opportunity academics have to shape it, that is a critical factor. This is clearly the case in the following example where it appears that new forms of e-learning have been enthusiastically embraced particularly in relation to distance learning. I am going to illustrate this argument by reference to three independent developments at Kyoto that originated from bottom-up initiatives.

The Transpacific Interactive Distance Education (TIDE), which is a collaborative project in distance learning with NTT-X and the University of California, Los Angeles (UCLA) is bringing about a new perspective of global distance education at Kyoto University. The main technological medium used is the Internet. The lectures are conducted as figure 10 shows. As figure 11 shows, on the left of the front of the lecturer room, some PowerPoint slides are shown while another two whiteboards show the image of students and the lecturer at UCLA. Figure 12 is the lecture room at UCLA which is used for the networked classes with Kyoto University.
This joint project, using real-time video-conferencing began in October 1999. TIDE was originally a more technology-driven project\(^1\) since what they have been exploring was the establishment of fast link lines and technology to conduct real-time lectures with interactive communication using 3-D images and simulation between lecturers and students, or between students located at different campuses across the Pacific. During the first year, Space Science Honours and Introduction Physics were jointly run with some academics from other departments within the institution. Following them, other courses such as Communication Studies (Spring-Summer 2000), Teaching English as a Second Language (Fall 2000) and Economics (Spring 2001) were successfully provided. Through this programme, a wider range of academics at Kyoto University have been encouraged to give a lecture online. In order to prepare for this lecture via networks, the University’s Centre provides support for the production of multimedia materials with the cooperation of their production team, which is referred to in the following section. Distance education with overseas universities has been successful by receiving good feedback from students of both universities which motivates both to continue the lectures.

\(^1\) Several links will carry the course transmission. The existing circuit from Kyoto University to Tokyo University will carry the first segment of the east bound transmission followed by the NTT high-speed, trans-Pacific link from Tokyo to Cupertino. Another link will carry the signal on to Berkeley where it will be converted for transmission on the CalREN (a project of the Corporation for Education Network Initiatives in California, CENIC) network to UCLA. The high-speed transmission will allow the simultaneous transmission of high-bandwidth connect such as demonstrations, graphics, video, sound, and computer simulations, content that can be remotely controlled in real time. Lectures, assignments, demonstrations, and class interactions will be archived for later on-demand access by students and instructors.
Parallel to the real-time lectures with UCLA, the professor of the division of distance education is currently in the middle of creating a digital archive of lectures. The centre developed and uses an automatic camera system for distance education, which automatically records lectures if they are conducted in a particular lecture room with the necessary equipment and the lectures are automatically stored in the archive. Students and lecturers of the courses can access the recorded lectures within the campus anytime during the course term for their revision or self-study. Six courses were being conducted in the academic year 2002 in this way.

When I was visiting other universities to see how they had been conducting online learning, I found one student seriously watching a computer screen which was showing only the empty lecture room with a desk and a blackboard in the background. Then I realized that the lecturer moved a lot within the frame, so often he was out of frame because the camera was fixed. If the lecturer is not used to being recorded for distance learning, he carries on conducting his lecture in his usual style. I felt sorry for the student watching that kind of recorded lecture, which was an intensive course for an exam. So I decided to develop an automatic recording system for distance education.

Broadcasting lectures may not require new pedagogy but as the above comment shows, the lecturers are required to acquire certain skills to be properly recorded. For recording, there are two kinds; 1) studio recording and 2) recording usual lectures. The first one can guarantee the control of the image/videos through recoding by professional camera crew, but it may lose the atmosphere of regular classes and create more artificial environment for lectures and students. Whereas, the second one may be able to bring about some kind of familiar atmosphere but this requires certain disciplines to lecturers to conduct his/her lecture within a camera framework. Instead of providing training courses or establishing new teaching practice codes for e-learning to provide some discipline in controlling their ways of giving lectures, the professor went for a technological solution – the development of an automatic recording system to capture the ‘non-disciplined lecturers’.
When we record lectures for this project, I set the cameras to capture 80% of images of the lecturers and 20% of those of students. Automatically the camera switches from the image of a lecturer to students. I often receive positive comments on this since it brings about a feeling of the real presence. This time I'm paying extra attention to the way of capturing the faces of lecturers. We take their faces relatively big so that we can convey their expressions well. I think conveying the atmosphere of the lecture through the lecturer's expression is most important. Technically speaking, it is much easier to pull the camera back, which captures the whole image of the person. If we want to capture the subtle expression of the lecturers, we need to increase the accuracy of the calculation of the observation of the lecturer.

The tendency of technology-driven development is pointed out by a group of academics of research centre of higher education, which participated in the pilot study of lecture using automatic camera system. One of the staff from the centre of higher education commented as follows:

The development of online learning in Japan is generally very technology-led. Even though we worked together [with the division of Distance Education at the Centre for Information and Multimedia Studies] for the development and the implementation of the automatic camera for distance learning, our pedagogical views were hardly reflected in the development. It was like, they pursued what they were interested in and we observed the processes and conducted assessment by survey. But the two parties were hardly mutually influenced.

Although there are several technological innovations regarding e-learning, the core format of e-learning is fixed to a lecture style. As the professor comments, the image of lecturer's face is considered a crucial of this form of e-learning. Rather than creating a student-centred learning environment via ICTs, the professor is focusing on reproducing or simulating the realness of a lecture conveying the atmosphere of the lecture room. The idea of student-centred learning comes only when students use archived resources for self-study in this case. The interest is not in distributing the course for flexible or open learning but basically tied up with campus-based study for domestic students.
b) Active participation in e-learning --- CALL

If we look at the developments of e-learning in different part of the university, in the domain of language education, a very different picture emerges. Instead of passive resistance to the introduction of new technologies the contrary pattern occurs – academics are more actively participating in their use. Why is this the case? The argument made is that it is not simply due to different attitudes amongst the academics involved. The process of development and deployment is one which created space for academic units and individuals to be much more involved in shaping how ICTs were to be used. The outcome of this bottom-up initiative has been the adoption of a flexible system with various kind of functions shaped primarily by pedagogical values (more on this below). As for computer assisted language learning (CALL), there are two emerging learning forms – self-study based learning using CD-ROMs and CALL for a classroom learning at computer laboratory.

Language Laboratory (LL) had been the main technological tool for a long time since the post-war era and since then there has been little innovation in language studies although there have been some improvements like digitized LL. Reflecting the recent trend for ICTs for teaching and learning at Japanese universities and the increasing importance of English as a global language, the improvement of the quality of teaching foreign languages became indispensable. The old conventional language teaching methods using LL were finally replaced by more technologically sophisticated CALL systems at Kyoto University. CALL systems are thought to be particularly suitable for individualized learning for a range of language proficiency.

For classroom teaching and learning, three rooms equipped with the CALL systems are available and two of them have installed a system called CaLabo 2000, which allows learners to conduct multiple tasks in various languages. One desk has two computers to work with the CALL system (see figure 13 and 14 below) and another computer as centre monitor which shows multimedia resources such as texts, images and videos which are
under the control of instructors. Images and pictures on the instructors' screen, multimedia resources or sound can be delivered to individual students via projectors and monitors set in the centre of each student's desk. Course materials can be distributed to all students simultaneously. The desks have also been equipped with digital LL units, headsets, etc. Also the desks have cameras, which enable students and instructors to check the shape of the mouth for each sound through the network (Dantsuji, 2001). Also, there is a section for free English compositions in which students collect relevant information by accessing WWW to construct their compositions. After completing the composition, students can send it to the instructors so that the compositions can be assessed properly. If students use a menu of free conversation, they can work in a pair or in a group without any constraints of physical location in the classroom and these conversations can be monitored by lecturers on their monitors. Furthermore, the system allows a particular session conducted by a group of students to be presented to other students as a model.

While the adoption of CALL in a classroom teaching and learning, there are some new attempts of self-study language courses. It was in 2002 that Kyoto introduced CALL as an accredited course through self-study using CD-ROMs for English (Suiko, et al., 2004). About 1000 students currently take this course each year. The idea of CALL is originated in a report on the situation of English language education at Kyoto University published by a committee group of English language in 1997. According to Suiko
(2003), the then major problem was the extremely small number of full-time English teachers compared with the size of the students taking the English language course.

Around the 1980s the number of each year who took English I and II was approximately 2500 students and about 75 students were allocated to each classroom. However, after entering a baby-boom period in the mid-1990s, the total number of the students taking the courses was 3075 at its peak and about 100 students were squashed into one classroom for language courses (Suiko, 2003). This led the university providing poor quality of language courses without much interactivity and an urgent need to improve teaching practices were sought. Based on the realisation of the necessity for drastic change, the introduction of CALL was considered a possible solution.

After 1997, the poor quality of language study became a nation-wide issue and this led to the establishment of the production team of CALL for university English learning because of the lack of appropriate learning materials at a university level. Funded by NIME and technically supported by the educational division of NHK (equivalent to the BBC), some leading experts on CALL developed the courseware. As a result, ‘Listen to Me!’ (four volumes) for beginners, ‘First Listening’ for elementary and ‘College Life’ for intermediate were developed. According to the regulation set by the government, one credit is equivalent to the 45 hours of study and completing ‘Listen to Me!’ requires 40-50 hours, therefore, they decided to accredit if students complete studying with the CD-ROMs. The software has study management programme incorporated, which prove when and how many hours each student study with the courseware.

In 2000/2001 the CD-ROMs started to be used at Kyoto University and surveys conducted with students report improved feedback from them. Double the number of students responded with satisfaction to the use of CALL than the regular classes. The use of CALL made students much less conscious of the size of a class and proved significant improvement of the face-to-face language courses. Based on the survey conducted at the
end of each semester, the self-study based classes using CALL have obtained better feedback from students, which motivates them to expand this type of provision.

<table>
<thead>
<tr>
<th></th>
<th>Unsatisfactory</th>
<th>medium</th>
<th>Satisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face based regular classes</td>
<td>30%</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>CALL class in 2000/2001</td>
<td>3%</td>
<td>16%</td>
<td>81%</td>
</tr>
</tbody>
</table>

Figure 15 Student feedback on CALL classes (Source: Suiko, 2003: 10)

There may be some criticisms towards this kind of self-study based classes. However, Suiko (2002: 15) defends it by saying that mastering languages requires active participation in the process of learning and CALL provides student-centred learning environments. This clearly led to the shift from teacher-centred classes to student-centred learning. In this process, teachers can play a supportive role rather than the major one. This technology-dependent learning emancipates students and teachers from a fixed time-schedule and place and they believe that this may open up some other possibilities to incorporate face-to-face lessons in the time-slot which are created by adopting self-study classes (Suiko: 2002).

Thus, CALL using CD-ROMs was adopted to resolve problems which the university was having in their then-teaching and learning practices. Both of their attempts of using ICTs for language study were developed by academics through incorporating technological advances as well as pedagogical values. The main point to emphasise in this section is that these examples reinforce the argument that it is not necessarily that conservative institutional culture prevent the uptake of ICTs for teaching and learning as the case of SCS shows. As long as academics have clear idea to resolve problems, the active involvement and the successful innovative use of ICTs for teaching and learning can be achievable.

The clear problem solving attitude towards CALL and the incorporation of pedagogy has led to the overall successful application of ICTs for language teaching and learning.
Currently, the division of CALL and academics of language studies place a focus on the production of course materials including CD-ROMs. In this process, the division of production team for multimedia resources plays a significant role to support bottom-up initiatives. The following section briefly reviews how they support bottom-up projects and highlights some problems.

c) Active creation of materials for e-learning --- The division of multimedia contents

The division of multimedia contents has been contributing to create diverse forms of e-learning at Kyoto University by encouraging individual bottom-up projects within the institution. This division is directed by one of the assistant professors in the centre and currently has three part-time staff with backgrounds of art design - graphic design, 3-dimensional computer graphics, images, and pictures respectively - in order to produce multimedia contents for academic staff. Interestingly, the division had to start producing multimedia contents from scratch because multimedia never saw its full growth in the 1980s and 90s in Japan. The associate professor who is in charge of this division talks about the production of digital contents as follows:

The production of multimedia teaching materials did not start quickly. In fact, not many academics showed an interest. ...... After the establishment of the centre, we started to hire staff, but even I didn’t know that there were so many different kinds of speciality in digital arts. I learned that if we could get all the specialists together, it was more likely that we would be able to produce multimedia contents. So we employed them. This was our first step. Then, we realized that this was not enough. University teachers know how to conduct their lectures or classes using a conventional blackboard or slides, but usually don’t have any idea about what multimedia contents would be like and what they could do with them. Meanwhile, the staff of the digital contents group know how to produce digital images and pictures, but if they are not given any instruction or requests, they don’t know what to do. ..Bringing designers and lecturers together doesn’t go anywhere. They need to have solid communication and work together to understand their own ideas and intentions. So basically, unless academics have an
attitude that they are happy to go through this kind of collaboration with the designers, we cannot produce materials. ...... At Kyoto University, academics have a high degree of autonomy\textsuperscript{10}, so individuals are doing very different things on their own. Under these circumstances, we haven’t had many requests from academics. So to start with, we have produced some multimedia contents as samples. By showing academics we can produce this kind of material, we are hoping that they come along.

In addition to the unfamiliarity of multimedia teaching contents or the lack of interest in e-learning, promoting bottom-up projects is difficult particularly under the circumstances of no university e-learning strategy or strategy at a school level.

In North America and Europe the post of instruction designer is a recognised role. However, ‘in most Japanese universities there is neither support staff nor expert technologists to advise and produce new and innovative courseware’ (Jameson, 2002: 37). Jameson (2002) notes that if staff are brought into the universities to fulfil the role of a technologist or pedagogue, they are employed in posts classified as part of the administration and he points out that this create a risky position in which the teacher is much stronger than the technologist or pedagogue and difficulties in setting up successful teams for the development of e-learning. His observation applies to the

\textsuperscript{10} Since the establishment of modern universities in Japan, crises of autonomy have occurred on a regular basis. The Sawayanagi Incident was one of the most serious ones (Osaki 1997; Ogawa, 2002: 88) In 1914 President Sawayanagi of Kyoto Imperial University (current Kyoto University) dismissed seven faculty members immediately after he was inaugurated as the principal. Because he thought they were risks in terms of academic ability and character. The University’s School of Law was adamantly opposed to his decision as it undermined university autonomy. The School of Law eventually prevailed and the new principal resigned as a result. In those days, principals were directly appointed by the Ministry of Education and not elected by faculty members. This incident was the turning point in determining that all faculty issues would be decided by the school. As schools subsequently experienced and solved these sorts of problems for themselves, their energies occasionally came into conflict with the policies of both the government or university presidents. As a result, autonomy for Japanese universities is limited to the autonomy of each school (Gakubu Jichi), instead of campus-wide autonomy. Ogawa (2002: 89) claims that although Japanese universities are often referred to as centrally organized by the Ministry of Education, each school has significant power. The decisions concerning the content of education and research, and the selection of academic personnel are usually left to the schools. Ogawa (2002: 91) further refers to the problem of high degree of autonomy of each school in a university is an obstacle to reform related to the advancement of knowledge and social change.
situation of Kyoto University. The division of multimedia contents has so-called instruction designer or learning technologists to support the production of teaching and learning materials. However, their current condition highlights the problems most Japanese national universities are encountering, but the government has not paid enough attention to yet.

So far, the work has been completed by the existing staff. However, considering all of the members in art are employed part-time, there is a limit to the amount of work they can do. The assistant professor commented:

The problem is the budget for these technical staff. We cannot obtain money from the government to employ these people. In the case of national universities, our budget, apart from the salaries of full-time staff, is allocated by the government. We apply for a new post to the Ministry of Education, and if they accept it, the money is allocated to the position. In other words, if we could set up new positions for these technical staff and the government accepts them, we can employ them full-time. But in reality, the government has been cutting down on the number of civil servants because of the bad state of the economy, so it’s 100% impossible to create a new post. So we need to cut down on other positions such as research fellows, or give up buying new facilities/equipment in order to raise money to hire these people. And even if we were able to hire three technical staff, they need to have constant work since we have to keep these people for a certain period once we hire them. This is more like human resource management in a company! ...... It’s very rare that national universities have a faculty of arts in Japan. Colleges of art exist but not in a university. So it’s virtually impossible to create a new position for art people at a university. We can hire a few technical staff at a time, at most one member of staff a year.

Thus, the lack of social recognition of the importance of these technical support staff has become a problem in producing multimedia contents as well as promoting e-learning, itself. This is not limited to national universities like Kyoto but almost all Japanese universities have similar problems. In addition to the shortage of appropriate staff, the
team has to deal with a variety of requests from a range of academics units across the institution – from Medicine, Economics to language studies. For example, the very first multimedia content they produced was the animated image of the process of the development of the human embryo, which has been used for the course of Embryology in the Graduate School of Medicine.

Following the animated 3-D images of the human embryo, one of the professors in the Graduate School of Economics approached the division to produce Web material for his course in IT Business Management. This content is made for more self-study to give a good foundation before attending a ‘normal’ class and was developed into a very stylish Web content making the most of the facilities such as a virtual studio. The leader of the production team explained:

The professor has had a very clear image of how he wanted his contents to be. Well, in his case, he’s a specialist in IT related areas. So he was very keen on making this kind of multimedia content. We filmed his lecture in a virtual studio and we added computer graphics in the background and made slides synchronized with the video-streaming of his lecture. We exchanged our opinions from both sides and finally reached the one which he wanted...

Thus, gradually some academics started to show their interest in the use of this central service. However, compared to the size of the university, the support section is extremely small. This means that they have to deal with a wide range of subjects from Medicine, Social Science to Arts. However, as the centre works to promote the uptake of ICTs for teaching and learning, the diversity of technological forms emerge, which bring the form of e-learning starting with SCS to a new dimension such as more complicated and sophisticated multimedia technology making the most of their facilities such as a virtual studio. As the diversity in the form of e-learning has emerged, the original concept of networked university envisioned by the government has been diverted.
Summary

The chapter examined to what extent e-learning initiatives by a top-down approach at a governmental level can be permeated into the actual teaching environment at Kyoto University. Through the stage of implementation of SCS which was mainly developed by a governmental top-down decision. Kyoto University is one of the top users of SCS based on the official data reported by NIME. However, the real use of the system is rather limited and has been resisted by academics. Although there were some uses of SCS for teaching activities, most are for domestic use, that is, limited within the university to link separate campuses. Some experiments to conduct networked classes with other universities has been tried, but many problems are evident. Seemingly minor institutional differences such as term structures and time schedules became a major hindrance for 'networked classes'. For the realization of networked classes, the standardisation of institutional settings apart from technical one is required. Also, SCS lacks versatility and does not provide open and flexible learning.

SCS also reaches the second major process of changes which brings together universities mainly in Kyoto region under the umbrella of consortium. Kyoto University's reluctant participation in the consortium also highlights the difficulties and complications of realising the networked university. While most universities are willing to get connected for exchanging credits amongst partnership universities, Kyoto University has shown an active resistance to its involvement. The notion of 'getting connected' or 'being networked' appears to be simple and it is assumed that it should be benefit to all. However, the experience at Kyoto provides evidence of the complications and dis-benefit from being connected. Participating in the networking can mean the dilution of the educational quality in some cases. In particular, institutions like Kyoto University may perceive this kind of networking as least attractive because of this. However, this does not mean that the concept of networking is rejected by them. As long as the institution has a space to select which institutions to be connected, networking can work out.
Whilst the analogy of a network is attractive it is misleading to think all the nodal points are of equal size and value. In reality, the nodal connections are much more complicated and institutions do not just link to each other in a simple process. These limitations and problems of SCS and the sophistication of information infrastructure in very recent years, academics are shifting towards the use of the Internet for distance education. Some courses are linked with UCLA and these attempts have been successful for the past years. Also, apart from ‘networked classes’, the successful uptake of ICTs for innovative teaching and learning by a bottom-up approach occurred. For example, the case of CALL illustrates a quite contrary picture to the case of SCS.

With the cooperation of the division of multimedia support team, the process of developing e-learning is actively shaped by the academics regarding how the technologies are to be deployed to fulfil their pedagogical values and resolve any problems that they are facing. The overall argument here is that there is no absolute resistance to the uptake of new technologies for teaching and learning. The point is, if the technology does not create spaces for the values and culture of academics, department and subject areas, resistant emerges as this chapter shows. These examples underline the social shaping processes that are the major factors in the development and deployment of e-learning and unless the space and opportunities for academics to inscribe their own values and priorities in developments, then they are unlikely to show much enthusiasm for e-learning.
Chapter Six

The entrepreneurial experience: a case study of Waseda University

Introduction

This chapter focuses on Waseda University, one of the top private universities located in the very centre of Tokyo. Waseda University can be characterised, in McNay's (1995) terms, as a mixture of the corporate model of the university which emphasises strong central control and the enterprise university with its concern for market forces and more devolved structures of responsibility for achieving corporate goals. This is particularly apparent with the digital campus consortium (DCC) which is a project to link the university with similar institutions and industry to develop e-learning. This subsequently developed into the cyber university consortium (CUC), which aims to develop programmes of activities outside of Japan as well as internally (see below for details).

This case study provides us with good examples of the diversity of forms of e-learning across the university in relation to these two developments. Currently, private universities in Japan are facing tough competition in their struggle to survive since they have been experiencing a significant decline in applicants over the past 10 years and the situation is expected to become potentially much worse over the next decade (see chapter three). Such circumstance resulted in many private universities investing resources into e-learning facilities whilst also trying to develop new teaching practices, whilst seeking to improve their institutional identity with the help of ICTs. The chapter looks at their attempts to incorporate e-learning in this context and, as we shall see, Waseda has experienced different kinds of problems and achieved different types of success to those of its counterparts within the national universities.

First of all, the chapter review the footsteps of the university to establishing the consortium by paying attention to external as well as internal factors. Then, it looks at the snapshots of some academics units which developed uniquely different forms of e-
learning. Through these different pictures, this chapter aims to show how academics respond to the internal as well as external changes in the process of developing e-learning. The importance of the linkage of bottom-up initiatives and a top-down vision at a school level for the dynamic development of e-learning through the consortium is shown in this chapter.

**Background to the case study**

The university was established in 1882 by Shigenobu Okuma, a scholar and government leader with the aim of upholding the independence of learning, promoting the practical utilization of knowledge, and contributing to a wider social purpose of educating for good citizenship. Originally founded as a college with three departments, under the old system of Japanese higher education, it has grown into a comprehensive university with nine Schools – Political Science, Law, Letters, Arts and Science I, and II (evening classes), Education, Commerce, Science and Engineering, Social Sciences and Human Sciences plus twelve graduate schools including Asia-Pacific Studies, Global Information Telecommunication Studies and Japanese Applied Linguistics.

Waseda University comprises a private corporation and the academic institution, both headed by the Principal who serves as the Chairman of the Executive Board, and leads the academic institution as shown below. The Principal is elected by the faculty, staff, and alumni, serves a four year term (can be extended up to the second consecutive term by re-election).
As of April 2002, the university, which has 44,577 undergraduate students, 6,147 postgraduates and more than 1000 fulltime staff, is considered one of the largest private universities in Japan\(^\text{11}\). Their six campuses are scattered all over the Tokyo area – three major campuses are located in the same district and another one, the School of Human Sciences, is located outside of Tokyo. This geographical spread has made it rational to connect each campus via ICT networks for administrative work as well as academic activities including e-learning.

Waseda University is currently shifting toward more entrepreneurial activities through providing e-learning for lifelong learning to the public, professional training for company staff, establishing business ventures and extending their business such as running a hotel. What is interesting in relation to globalisation is Waseda proclaims that the university is in the process of developing a ‘glocal university’ by which they mean that it aims to establish a new educational system which can produce ‘people who can make actions locally holding global visions and aspirations while bringing about global dynamics carrying local uniqueness’ (Okushima, 2001: 37). The term, ‘glocalization’, as Robertson\(^\text{12}\) points out, is frequently used in the economic strategy in Japan since the

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\(^{11}\) From <http://www.waseda.jp/eng/about/statistics.html>

\(^{12}\) Robertson, R. ‘Comments on the “Global Triad” and “glocalization”’ conference on Globalization and
early 1990s and is relatively well-defused idea in Japanese society. Waseda University has been also developing a strategy for responding to the challenges of globalization by interpreting it locally and developing networks with other Asian universities so that Waseda can establish itself in a global market, particularly in the Asian Pacific rim. Establishing networks in Asia is of particular importance since newly developed Asian countries are an important market and a highly competitive one. While most other Japanese universities have been focusing on securing their domestic market share, because of the decreasing number of potential student population, Waseda tends to be unique in that it has adopted a global strategy relatively earlier than others (Okushima, 2001). In this strategy e-learning plays an important role in promoting the enrolment of overseas students for on-campus study.

The nine-year information programme
The digitization of the university dates back to the early 1980s with the building an ICT infrastructural network in the domains of education, research, and administration. It was, however, only during 1996 and after 1997 that substantial online activities at the university were initiated. What is of particular importance in the case of Waseda University, in relation to the development of e-learning, is the well-planned programme of activities as the below table shows. The programme of development indicated below came about through the decision by the University’s senior management team to found a Media Network Centre in 1996 which was charged with the responsibility for developing and implementing strategies for using new technologies in a wide range of activities (Matsuoka, 2000). Figure 16 below summarises the main developments which were undertaken.

Indigenous Culture held at Institute for Japanese Culture and Classics, Kokugakuin University. Available at: <http://www2.kokugakuin.ac.jp/ijcc/wp/global/15robertson.html>
### 1983 Plan for campus network improvement
- Campus network improved by the 3 systems of education and research, academics and information, and administration, in the base of all-campus information network system - “WIND”.

### 1996 1st term of information program
- Open Campus development
- Preparation of the network infrastructure which 50,000 people can make use of.
- Media Network Centre founded. (Integrating the 3 systems)
- Remote lectures by satellite and ISDN lines carried out. (Extension Centre)
- Digitalization of the academic materials started
- Electronic library and museum plan implemented
- Committee on the Promotion of Digitalized Knowledge in the School of Literature founded. School of Literature

### 1997
- More than 40,000 students connecting to the Internet and E-mail ID provided to all freshmen.
- Online academic databases (Yaichi Aizu Collection etc.) built and introduced to the public. School of Literature
- Co-learning navigation system experiment started (School of Literature)
- The foreign language learning experiment over the computer space started. (School of Literature)

### 1998
- CD-ROMs "Yaichi Aizu Collection" and "Shikoku Pilgrimage" published. (School of Literature)
- Real-time combined classes started. ("General Course")
- Remote lecture experiment started. (University of Edinburgh and "General Course")

### 1999
- Aiming opener education and research by classes on the network with other universities.
- Digital Campus Consortium founded.
- Classes on the Network started. ("General Course" etc.)
- Real-time combined classes started. ("General Course" etc.)
- Combined Seminars over the Network started.
  (Doshisha University, Korea University etc.)
- Foreign Language Education over the Network started. (De La Salle University etc.)
- Online academic databases built and private search engine for those databases developed.

### 2000 2nd term of information program
2001
- The number of classes on the network increasing.
- The number of combined seminars over the network increasing.
- The number of foreign language education classes over the network increasing.
- Continuing Education classes over the Network starting. (Information literacy education etc.)

### 2003 3rd term of information program
Cyber campus consortium established

### 2005
- Expanding "Glocal University" by open network.

Figure 17 Footsteps of DCC (Source: from [http://www.waseda.jp/dcc/consortium> modified])

Once the infrastructure-based developments were achieved in 1995, under the plan for the ‘informationalization of the university’, the nine-year programme was introduced and it was later extended to the year 2005. One of the major developments in the above programme is the extension of activities which were originally developed in the School...
of Arts (see below) and created the basis for the DCC. The whole plan of the nine-year information programme was divided into the following three phases:

**Phase 1: 1997-1999** - During this period, the university focused on the construction of ICTs network and relevant facilities so that they could provide various kinds of open learning opportunities. Waseda aimed to develop a sufficient network environment where 50,000 students were able to use via various kinds of database at the same time. The issues surrounding the information infrastructure of the university were also reviewed. Consequently, the university structure was restructured while network systems, equipment and platforms were being developed. What is important here is, towards the end of the first phase, the DCC was formed and pilot studies for online learning were conducted.

**Phase 2: 2000-2002** - The second phase extends from 2000 to 2002, in which Waseda placed a particular emphasis on the reformation of educational research methodologies while experimental online learning was implemented in distinctive ways. At this period, the notion of ‘Open Campus’ increases in importance. Waseda’s aim was to achieve ‘Open Education’, by which students can take a wide range of courses without having any administrative constrains beyond school level, while students from affiliated member institutions can also take those courses beyond institutional boundaries via ICTs. During this period, various forms of courses, interactive learning with overseas students via network as well as promoting lifelong education outside the campus via ICTs were also promoted.

**Phase 3: 2003-2005** - Waseda has now reached the final phase of the programme, in which they are attempting to re-establish themselves as a ‘glocal university’. With a particular focus on the Pacific-Asia region, the university is aiming to be an influential institution by extending educational global networks externally with overseas institutions while extending the domestic networks internally with other Japanese universities and local communities.


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13 The DCC has a close link with IT Strategies developed by the School of Arts, which I am going to refer to in detail in the following section.
14 From <http://www.waseda.ac.jp/wits/image/zentai.gif>
The overall picture of ‘informationalization’ of the university may give us the impression that all plans and projects were initiated from the top-down or by the university. However, the reality is much more complex and the main School to initially benefit from these developments, the School of Art, did so because it had independently gone down the path of developing ICTs prior to senior management initiatives.

Towards an ‘open campus’ higher education

Open campus (or open education) is a development to extend classes and lectures to all students in the university and to those in affiliated institutions. In the beginning this was done physically but was subsequently extended through the use of ICTs in terms of video conferencing. Without access to the state satellite technology system Waseda identified other, more ‘cost effective’ measures, to develop the availability of to these courses. For example, the ‘real time’ lectures have subsequently been recorded in DVD technologies and recycled for ‘on-demand’ use at later times.

Japanese universities, in general, are considered to be one of the most closed public institutions in society. Whilst this leaves a great amount of autonomy to academics, it also means academic activities are confined to each campus or lecture room. Challenging the closed nature of Japanese universities, Waseda senior management attempted to remove the administrative barriers of schools and departments in terms of the choices of courses so that all the students can take a certain amount of courses beyond their school. In 1999, 23 courses out of the 9 schools were available for open courses and the number of the available courses expanded to more than 100 by the year 2000. Although most campuses are not very distant from one another, travelling can be a hindrance for students as well as academics. In this process, ICTs began to play an important role. These open courses have been essentially conducted via ICTs as well as on-campus activities because of the dispersed campuses around Tokyo. Thus, the attempt to conduct networked classes via ICTs certainly started to remove School
administrative boundaries and, at the same time, brought opportunities to make courses available to wider audience.

Promoting ‘open education’ via ICTs has realized some unexpected benefits. One of the professors who viewed other academics’ lectures online comments:

Networked classes may be perceived as the better way of learning and students can get the most benefit from them because of wider choices. In essence, I think that’s true. But I feel they are basically to stimulate academics because we have to make our lectures open to the public in a way. Not only students but lecturers can now see what other lecturers are doing. Now we can see why some lectures are so extremely popular among students. I saw their classes, and they are amazingly intellectually interesting. If lecturers are confident of their courses, they are happy to make theirs open. This is tough for us since we are not allowed to be laid back but in the end we believe this will definitely lead to the better quality of teaching.

Around the same time, the university was also looking to establish links with other universities in the same region to exchange university credits. Because of the competitive higher education market, most universities were having to contend with the difficulty of rising staff costs but at the same time needing to expand their programmes by incorporating new courses. One of the solutions for this was networked classes amongst affiliated universities. In effect this allows the affiliated institutions to provide a wider selection of courses without employing new staff. This was expected to be an appealing feature of the universities to their students. The open campus development was later replaced by the idea of ‘open campus across time and space’ to push forward e-learning seriously and this was promoted in three domains: digitization of the university

15 For a start, they pushed forward a project ‘f-Campus’, in which they have introduced a exchangeable credit system between the affiliated universities in their neighbourhood such as Gakushuin University, Gakusyuin Junior College, Japan Female University and Rikkyo University. Under this project, about 1000 courses are offered with the cooperation of the five institutions and the total number of the students rises up to 70,000. Only certain administration such as the registration of courses was completed online and most lectures were conducted in a physical proximity at an initial stage, but this was later taken over by
teaching/learning environment, development of online archives at the library, and commercial oriented e-courses for lifelong learning. To promote e-learning, the university opened a new building in April 1998, and spent £50 million to equip it with the latest multimedia AV technology. One room can accommodate 742 people, has an enormous 200-inch-screen with 70-inch projectors both sides of the lecture theatre to facilitate e-learning.

DCC – the extension of technological applications
The DCC involves more than 20 national companies in 1999 to develop various educational and business projects such as establishing networked classes and developing new systems for e-learning, by integrating Waseda University, its university partners (over 100 nationally and globally today) and corporations such as business enterprises (Shirai, 2003). The DCC has become a major driving force to make Waseda University radical and innovative and has brought new dynamics in following three areas: 1) the relationship between university education and ICTs, 2) the relationship with other domestic and overseas universities, and 3) the relationship with companies. These new relationships have greatly influenced the way of developing and implementing the forms of e-learning at Waseda. The university proclaims this to be creating a new model of corporate university, which is unique in Japan.

The DCC brings together a number of different interests with different kinds of expectations of their own. For companies this was a great opportunity to enter an educational market which, prior to this, had hardly been exploited and for other universities the DCC was a pragmatic way of making their course options richer and more attractive without establishing new courses or employing new staff. For Waseda University, the DCC is a useful way to obtain expertise and technologies from companies and, at the same time, it can deliver a new institutional brand message that

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real-time lectures via ISDN and satellite.

16 Digital Campus Consortium. About the DCC. Information available at
Waseda is a leading enthusiastic innovative university by presenting the latest sophistication in e-learning.

The activities of the DCC are divided into two phases. In phase one (1999-2001), Waseda University conducted the following experiments during this period:

1. Network-style classes utilizing satellite, ISDN, and Internet.
2. Cross-Cultural Distance Learning (CCDL), which connected 30 colleges and universities in 16 countries for real-time seminars
3. Development of Tutorial English Learning Program.
4. Some 40 academic databases were opened to the public freely available online.
5. Distance Lectures for Company Employees.
6. Two joint ventures (Waseda University International and Waseda Learning Squire) were co-founded by Waseda University and some private corporations.
7. Support for digital publications.

(From <http://www.waseda.ac.jp/dcc/consortium/1ststg_e.html>)

Originally, this project was supposed to be completed by 2001. In the interview conducted during the first phase, an administrative manager of the central service who is in charge of DCC implied the uncertainty of the future of the project:

The DCC is finishing next year. That means we will lose funding sources. Once it's completed, we have to find some other ways to get funding to carry on this project. To be honest, we don't know how we can secure the funding. We may not be able to rely on companies any more since the economy is getting worse than ever and companies won’t easily provide us with generous amount of money unless they see some more potential in this. You know, it really costs a lot to create just one on-demand DVD course package. Courses produced initially cost more than 20000000 or 30000000 yen (100,000 to 150,000 pounds) just for one course! We need to think about some other ways of developing online learning.

<http://www.waseda.jp/dcc/consortium/aboutdcc_e.html>
Establishing links with companies has been a good way to obtain their expertise, however, at the same time, financial dependency is heavily placed on the companies. The DCC has to be profitable for companies in the end if they are to continue to support it. The main reason why the production of DVD course packages was initially so expensive is the university had to outsource their courses (a TV programme and multimedia production company) to produce them. While other developed countries such as the US and the UK had had certain experiences in Computer Assisted Learning and multimedia technologies at higher education level, Japan has rarely had experiences in this nor the professionally qualified staff to develop it. Thus, e-learning at Waseda, which started from scratch, went through a sequence of trials and errors from 1999 through the collaboration between various group of people such as academics, people from companies, and students who provide them with feedback on their experiments.

By the end of 2001, contrary to the expectation referred to above, the initial phase of the DCC was highly appreciated as a success by companies. This was not necessarily because of immediate gains but in terms of long-term potential and also in terms of company publicity to advertise their technological systems. For the universities it was successful in terms of attracting greater student interest in the university (e.g. applications for student places at Waseda were increasing). Therefore, it was decided to further extend this development to the year 2005. The new development has been renamed the Cyber University Consortium (CUC) which places more focus on developing a network among universities globally as well as nationally and aims to create new forms of 1) academia-industry cooperation 2) lecture development 3) expansion of distance education (currently 100 universities are participating) 4) global CUC project research. By extending their activities globally, Waseda aim to promote global literacy and intercultural understanding, by arranging joint classes, research and cultivating globally minded intellectuals, globalizing academia, and linking the academic and business communities17. In this second phase, the CUC project is more directly in

17 From <http://waseda.jp/dcc/consortium/in_aboutdcc_e.html>
charge of developing joint classes and conducting joint research projects involving students and teachers in universities overseas, in particular, in the Asia-Pacific Region. In these activities, Cross-cultural distance learning (CCDL), which was led by a professor of the School of Education at Waseda, is playing a central role.

The subsequent sections are going to look at the actual developments of e-learning within certain Schools. The first two case studies were key players in DCC, the School of Arts, and the School of Education. Following these, two other Schools, which see DCC/ CUC initiatives in different ways from the above two Schools are also highlighted.

The School of Arts
Amongst all the academic schools at Waseda University, the School of Arts has the most highly sophisticated e-learning in practice. It made the most of the DCC project to develop and improve e-learning relevant to its own pedagogical interests. However, the School was, in the early 1990s, far behind compared with other Schools in terms of infrastructural developments and the uptake of ICTs. The process of reversing this position began with recognition, at School level, that there was a need to educate graduates with practical skills and knowledge relevant for employment in the information society. This need was particularly apparent in the decreasing number of applicants to the School in the mid-1990s. A professor who was a key person for the development of e-learning at the School reflected upon this as follows:

The then-dean of the school took this [the decreasing number of the applicants to the School of Arts] very seriously and we started to think Arts had lacked the social message to appeal to younger generation. It was often criticized that Arts were not pragmatic and not useful for the society. We thought we had to get rid of this kind of scepticism towards Arts. Then, we came to the idea that we had to have our own medium to appeal and send our messages to younger generation and the society.
Within the School the senior management conducted a survey of academics to ascertain the degree of willingness for the construction and promotion of ICTs, which proved to be very positive. This outcome led to the establishment of a ‘networking group’ in 1995 and an ICT strategy was produced for implementation in 1996. At this initial stage, the focus was placed on the creation of digital multimedia archives, in which academics of the school could store their visual cultural curricula and resources as a way of permanent preservation and, eventually, for open public access via the Internet. Following this a new grouping in the School was formed, the committee of ‘informationalization’, which brought together academics within and outside the university, and companies to explore the application of ICTs to higher education. In this sense, the initiatives at the School of Arts led to the university’ DCC project which extended this work across the institution.

The process of e-learning development in the School of Art can be schematically outlined as follows:

- In 1998 a symposium for ICT strategies in the school of Arts was held at the campus, which attracted some attention from many companies who were looking for more business opportunities in higher education.
- The Yokokawa Electronics company proposed to serve as a system integrator in the process of developing and implementing e-learning. In Japan, there is a custom that each university has made a contract with Japanese hardware manufacturing companies to install hardware and other systems. Once they linked with certain companies, they need to rely on other hardware and systems to the same companies. However, Yokokawa, which is not a manufacturing company, do not bring about any complications in choosing technologies/ machineries without any constrains of manufacturers.
- For the company there was a lot of merit in entering the development of e-learning in this way since they could learn precious expertise from other companies more effectively by working as an integrator of systems.
- An education and research support centre was developed for the purpose of providing support for academics to create multimedia content and bring academics and companies like Yokokawa together for collaboration (Matsuoka 2000).
- A fact finding visit from the School was made to look at how another private university, at Keio, in which Professor Murai (a well-recognized father of the Japanese Internet) was broadcasting courses via the Internet.
Senior management at the School seek support from the university to establish an organization so that they can develop online learning by obtaining necessary engineering support as well as financial support from various external sources.

The DCC was launched in 1999.

Like most other Japanese universities, academics in the School of Arts adopted real-time lectures/seminars via video-conferencing which, during this period, was a synonym for e-learning in Japan. To illustrate pictorially what this means see the picture below. Classes shown below were conducted using a video-conferencing system via either satellite or ISDN (a type of optical fibre network). A large screen set up for viewing was the typical form of e-learning at this initial stage as Figure 18 shows below. Staff in charge of the lecture were on hand to provide additional instruction. Further experiments occurred by extending this approach through use of the internet in ways that included other universities which were part of the consortium.

Figure 18 General course IV

One of the technical problems experienced in the early stage of development was the stability of the system, particularly with live lectures. In the second year of the same courses, the recorded lectures were repackaged in DVD format which overcame some of the problems of instability in the communication system. While a lecture DVD is replayed over the monitor, the lecturer from Waseda in charge of the class gives the necessary instructions in real-time from a hub station in the university. At the same time, other types of interaction such as a question-and-answer session and discussion are carried on through e-mail, an electronic bulletin board, and a teleconferencing system so that the students have more opportunities for interaction asynchronously - for 24 hours.
Based on the results of this experiment, these courses over the network have become an official part of the curriculum among the affiliated universities since 2000. We can see this process in the pictures below: in figure 19 the lecture is in a studio on campus for broadcasting. In figure 20 the lecture is giving an introduction to the lesson which is live. Figure 21 shows students in classrooms each with a computer monitor. After the introduction is finished, the lecturer starts the DVD pre-recorded lecture. In figure 22 we see some of the content of the lecture which is stored on the DVD. In picture 6 in the top right of the screen we can see the pre-recorded information being spoken at the same time as the notes are being read by the student. In figure 23 the different colours on the screen indicate that the student is posing questions which are responded to in real time. One of the difficulties this created was an overload of information with too many things happening at the same time.
All of these experiments were rigorously evaluated for student feedback in terms of satisfaction with these pedagogical innovations. Whilst the above process scored highly in terms of interactivity (which was a state regulation - c.f. see chapter four) it nevertheless was not satisfactory from a student point of view and, in addition, ran into technical difficulties. One of the staff involved in this explains:

Especially, during the period of experiments in 1999-2000, we tried and faced several problems. When we used BBS [electronic bulletin board] for synchronous discussion while we were playing DVD and real-time supplemental lecture, the server went down. So the people from the company fixed the system and finally we could manage, but then, we had complaints from students saying that it was too busy to focus on the lecture because lots of things were happening at the same time and this was very stressful to them. So we just tried, came up to another problem, find out some other solutions, tried new ones, see the response from the students...

The experiments with these networked classes via satellite or ISDN was terminated in the year 2000 as the information infrastructure became more sophisticated. The experience gained through the experiments confirmed to School staff and the university of the potential for on-demand courses. Basically, the main contents were reusable in the form of DVDs. These lectures were marketed for lifelong learning purposes to students external to the university through the formation of a company Waseda Learning Square.

The success of the above activity extended the interest in e-learning to academics in other subject areas. Not only art-related subjects, historical, antholopological and
sociological data were also digitized. One of the outcomes of this extension of interest is that it brought to the fore the problem of collaboration between academics in different universities. For example:

It is really difficult to conduct networked courses with other universities in Japan. Usually, the plan to carry on the networked courses is accepted at the level of the board of trustees, but it is rejected when it came to the level of a faculty meeting. Academics tend to have a fear that their teaching jobs would be taken over by academics at other universities, which may lead to redundancy in the end. Networked courses allow the university to decrease the number of courses to hold by themselves after all. For example, if they receive 10 courses from Waseda, the university on the receiving side can save the labour which is equivalent to 1.5 persons' teaching workload.

Also, some perceive e-learning as a newly emerging threat:

Other criticism began to emerge from the affiliated universities after the experiments, which looked successful initially, but the affiliated universities ended up being on a receiving side. They receive a wide range of courses from Waseda but only few courses were emitted from other universities. This certainly brought about a threat to our partner universities. They claimed that this was a new form of academic imperialism by large and affluent universities such as Waseda or Keio University.

In fact, networking can amplify the power-relationship amongst networking members as the above comment shows. Universities like Waseda have been successful in attracting capital from companies with concrete strategies, which allow them to create highly sophisticated course content and related systems with top-level expertise and affluent financial resources. However, this is rather rare case. Most universities are struggling to develop relatively basic e-learning with a limited number of enthusiastic staff within limited time and money.
In addition, collaborating with engineers from companies was not an easy task for academics at the initial stage. The professor of the School of Arts explains:

We had ideas but no technological skills or pragmatic expertise on educational technologies since we had no previous experience in this. We had to rely on outsourcing companies for technologies and other expertise. For example, Keio University’s Shyonan Fujisawa Campus had already had very sophisticated networks within the campus and they had been broadcasting their recorded courses via the Internet right after finishing a regular classes when we were still planning our e-learning at Waseda. They put things forward with whole hearted supports within the campus providing technical supports. Looking at our case, the school of Engineering had very good systems and technologies, but they only used them within their school and had not intention to offer other schools with their expertise. Essentially, we had to rely on companies for technical supports.

In a way, this rather restricted circumstance for the School of Arts, in fact, allowed them to be open to other advice and opinion from various kinds of companies ranging from manufacturing to publishing. However, there were difficulties in terms of communication. The professor put it:

We went through lots of meetings and negotiations with people from companies, especially engineers. He [introducing a former student with some knowledge of computer and currently working as his technical assistance] has done a great job so far and without him we couldn’t have achieved the current success. He can understand what kinds of picture I have for my own e-learning courses. But my idea is too vague for engineers to understand. Then he works as a mediator between me and them.

Once they realized the urgent need to secure a support unit for the creation of multimedia educational contents, the School applied for funding from ‘Academic Frontiers’ held by the Ministry of Science, Education and Sports. After the successful application, the School established Toyama Research Centre (TRC) in2001. In order to explore more
effective and sophisticated forms of e-learning, TRC\textsuperscript{18} began to conduct research on the actual practices of e-learning, in particular on-demand courses provided by the School of Arts (40 courses were available in the year of 2002). Thus, the School is evolving into a self-containing academic unit with regards to e-learning.

**Some further developments in networked classes/ courses**

Through the experiments of e-learning, or ‘networked courses’ developed through the School of Arts, the university aims to make ‘classes on-demand’ a practical option (6 subjects available so far). By this they mean students can access a course from almost anywhere via the Internet. Once a student logs into specific course content, it is considered as an attendance. In addition to the video-steaming and visual and text explanations, BBS and computer-conference are used for each course content as supplementary devices so that students are encouraged to contribute to text-based discussion among students as well as lecturers/ tutors. These networked courses enable more spontaneous discussions, and provide question and answer opportunities as follow-ups via e-mail, which can be rather neglected in conventional classes in Japan. Thus, the adoption of ICTs for teaching and learning has improved communication between students and academic staff. Also networked courses can bring about more flexible learning opportunities through understanding lecture content by repeat viewing, as necessary, and also make it possible to have lessons suited to individual lifestyles of students with various commitments.

In spite of the fact that Waseda use the term ‘on-demand’ courses, the word encompasses the following three types:

\textsuperscript{18} TRC has also been conducting research on some other potential forms of e-learning such as problem-solving classes via ICTs and multimedia. Furthermore, they have tried to establish cyber-lectures with Cross-Cultural Distance Learning (CCDL). Through establishing cooperative learning with domestic as well as overseas universities, they are promoting foreign language learning and cross-cultural studies, which are believed to lead to the realization of glocal university in the future.
1) Full on-demand - In principle, courses are to be conducted where and when students want to access them. BBS is also used as a supplementary device.

2) Hybrid - This form of online learning is a dual modes—a mixture of conventional face-to-face classes and on-demand ones. The ratio of the two forms and the degree of using BBS during the course term depend on the lecturers’ decision.

3) BBS – this form of chat technology is used within or outside conventional face-to-face lectures.

As for the types of contents are categorized into the following four:

A) Synchronized contents - As the picture above shows, while lecturers run their courses on the screen, textual and visual materials are also presented at a controlled pace (cf. Figure 24).

B) Asynchronized contents - Video-streaming images of lectures are broadcasted at the initial stage of each class to provide some introduction as well as explanations. Meanwhile, educational contents are provided in the form of HTML on the Net.

C1) Video-streaming - The images of lectures and textual and visual learning materials are broadcasted in the form of video-streaming simultaneously, which requires the network speed of more than 256kbps (cf. figure 25).

C2) Video-streaming - Watching video-streaming. This is rather similar to the Open University’s TV programmes but involves using the Internet.
In the academic year of 2003, 26 courses full on-demand courses and 37 of hybrid courses were provided by the university\(^9\). In 2001, there were only three full on-demands courses provided. The number of courses using ICTs seems to be doubling almost every year.

From their experience of networked classes with other universities, they reached a conclusion that they should look for other potential in connecting them to overseas universities, although in the School of Arts, they continue to provide their courses to their own students as well as domestic ones rather than attempting to connect them overseas. The next section looks at CCDL, which is the core centre to promote global networked classes. In the section, the interpretation of ‘global’ is examined.

**Cross-cultural distance learning (CCDL)**

A further entrepreneurial development which followed the application of ICTs (see above) came about with the formation of Waseda International Co Ltd which is jointly owned by the University along with Matsushita Electrical and Towa Engineering. Its main activities are in developing and implementing educational courses, tendering for administrative contracts in schools and the marketing and sale of educational courses. They claim to involve 17 countries and 33 universities and at 2002 approximately 3000 students have been accredited through this programme (Shirai, 2003). The university organises CCDL to provide ongoing students with more opportunities to practise foreign languages and exchange their opinions/ideas with students located overseas via video-conferences. Students pay extra for these courses, and can receive credit towards their main study programme. Whilst this is an extra cost, it is still probably much less than paying for private language tuition outside the university. For the language lessons, students can work in a group of students (approximately four) with a tutor. In the pictures below we can see students receiving an English tutorial using computer assisted

learning (CAL) through a type of video conferencing system initially developed by Panasonic with the university. The small pictures within the screen indicate the other students involved in the small group session as figure 26 and 27 show. In a survey of CCDL provision student feedback indicated a high degree of satisfaction with their experience (Shirai, 2003).

![Figure 26 Language lesson 1](image1)
![Figure 27 Language lesson 2](image2)

CCDL seems to have been very successful in terms of developing and implementing online language tutorial lessons which have resulted in the achievement of significantly high score of national exams called TOEIC among the students (Shirai, 2003). In addition, these courses have also been made available as lifelong learning opportunities available to people outside the universities. Currently, CCDL is positioned at the centre of the university’s strategy which places extra emphasis on global academic activities. One of the paradoxes of globalisation is that the dominance of English language internationally has provided an opportunity for the cyber university curriculum to meet domestic and East Asian demands for learning English through ICTs.

These developments (above) have occurred against a background of relatively low-levels of sophisticated technological applications in language learning in Japan. A leading professor of Applied Linguistics in the School of Education, who is also the director of CCDL, has been an enthusiastic and committed advocate of this development. She explains her background which led to the current development of networked language classes. She has obtained her degree in Applied Linguistics in the UK in the 1980s and gained some experiences of CAL during the period:
Everyone in my department at University of Edinburgh was already interested in CAL [in the 1980s] and experimenting with it, so I had to learn it. After that, I became more familiar with it. When I started to teach at Waseda, nobody was interested in CAL, so I started programming so that I could use it for my students by myself. ... Of course, initially, people in my department didn’t show any interests in what I was doing at that time, but as time passed by, especially after DCC was initiated, my colleagues started to be interested in CAL and they became more supportive and cooperative.

Thus, the development of CAL for language studies was promoted as a School-wide initiative. There are several benefits to conduct networked language lessons, such as cost-effectiveness while also providing students with more individuated teaching approach, but above all, the positive response from students in feedback was the decisive factor to pursue these initiatives. It is obvious that there is a consumer consciousness in this development, which is universal in the domain of higher education, and for a private university, this tendency is even more significant. The professor in the School of Education and the director of CCDL also mentioned:

> After all, I think we have to offer students what they will be pleased with. In order to satisfy them, we’ve been exploring what the best way of university education would be. ... students really liked these networked activities and have found them very useful to practice foreign language without being too conscious about others’ presence.

Networked language classes are of particular importance since they create the foundation to participate in globally networked joint classes which can involve sharing a range of expertise as well as developing cross-cultural understanding. The language classes develop the capability of students to subsequently participate in globally networked ‘cyber-lectures’ and ‘cyber-seminars’ in the third and fourth year of undergraduate study or during the postgraduate study. Whilst these activities are presented by Waseda

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20 For example, in the UK, the Dearing Paper (1997: 64) also recognizes the increasing emphasis on the individual as customer/consumer.
University as highly successful this perception is not always shared, however, as one of the contributors to this development points out. Among the affiliated overseas institutions, the University of Edinburgh is registered as one of them. These affiliations are not based on university level contract and quite often on an individual base. Interestingly an emeritus professor of Applied Linguistics, who has offered ‘cyber-lecture’ to Waseda University through CCDL programme, commented as follows:

Several occasions, I provided cyber-lectures for Waseda University. I find the experience very difficult. The reason basically was the lack of audience. I suspect that this is true of many of people who are accustomed to lecturing to a live audience. But when you find yourself with a microphone, even though you have on screen the people on the other side, it is very difficult to observe responses from them, and when they do respond, there is a delay. So it’s difficult to pick up signals as to whether you are getting your communication across. So I found that really difficult and I’m not sure I could honestly say I enjoy the experience probably for that reason. Michiko and her colleagues both in Japan and in Korea, you know, it’s a joint venture. They are extremely helpful and supportive in every way and students were certainly concerned and very much wanted to participate. But as I say, perhaps because it was a new experience for me, I found it difficult. …Even though I did it several times, it didn’t get easier. ……as a lecture, you have a herd group of students … it’s very curious experience because you don’t know who to look at. … … I think I probably wanted to perceive some kind of visual response in their faces, in their gestures or whatever, as you are doing to me now, precisely, we do it to one another, because it shows that we are interacting, participating in a communication with one another. That’s exactly what happened in a lecture, I think. Even though you are not aware of it, it’s almost subliminal, but in the cyber lecture, even if it happens, and its play probably does, but it’s too late because there is this gap. … … It’s only a few seconds, I’m not sure how long it is, but presumably because sound travels slower than light, and they had seen me before they heard me. But having said that, from the practical point of view, if one is interested in making one’s ideas and so on available to other people, and if, they wish to make to gain access themselves, to people who will not meeting person, it’s probably a good idea.
What this professor commented endorses is the idea that video-conferencing lectures can be reasonably useful for knowledge-transmission based teaching and learning, which is still the predominant model of teaching and learning model in Japan. However, for the professor, the absence of an audience and the possibility of interaction that occurs in real lectures were problematic. The recorded videotapes of his lectures show a very teacher-centred, one-sided lecture, with occasionally close-up shots of the image and notes from an OHP. At the very front of the lecture room are Japanese academics and none of the students raised a question throughout the whole series of courses. Possibly, in terms of networking classes or institutions, CCDL may be very successful. However, the fact that the university has been linked with overseas institutions to conduct classes seems to be the main basis for justifying its success rather than its pedagogical value.

Currently, the collaborative activities of CCDL are more focused on universities in the Asian-Pacific rim rather than North American or European Universities. This may be simply the reflection of the university’s strategy towards globalization, but at the same time, it may be the natural outcome of more familiar approaches to teaching and learning which tends to be more teacher-oriented pedagogy in East Asian regions and this may help avoid confrontation with more learner-centred approaches to e-learning that are characteristic of UK models.

Global Information and Telecommunication Institute (GITI)
The Global Information and Telecommunication Institute (GITI) is a research centre containing a graduate school called Graduate School of Global Information and Telecommunication Studies (GSGIT) in Waseda University. It was established to promote the international collaboration of educational and research activities related to ICTs in April 2000. The case of GITI is interesting in that it gives another insight into e-learning experiments which have taken place independently of the DCC – the University’s digital consortium project. GITI has been working on on-line collaboration, nationally and globally, using the Internet and satellites to become a global networked
institute with particularly strong link within the Asia-Pacific Region. The particular focus of GITI has been placed on the creation and distribution of multi-media contents, an establishment of information and communication systems which are standardised, and their subsequent distribution.

Among the academic staff of the Institute, there is one professor who has been attempting distance learning via ICTs in Telecommunication Engineering. He has conducted real-time networked classes on the topics of automated teller machine, ICTs and mobile technologies, management and economy, by collaborating with colleagues and with Hanoi University, in Vietnam, for more than three years. Each year he gives a series of 12 video conference lectures which are of 90 minute-duration that are broadcast in the autumn term. In return his students are able to participate in similar formatted lectures delivered by staff at Hanoi University. He comments:

In my case, I didn’t mean that I wanted to try distance learning via ICTs. I wanted to bring about the opportunities for my students to listen to some other academics’ talk or lecturer outside this campus. So it is not necessary to conduct networked courses via ICTs, unless there are geographical problems. That’s just the matter of convenience.

Thus, in this case using ICTs are not about improving pedagogy but concern extending the curriculum available to students. He goes on to explain the difficulties to conduct experimental networked classes overseas without securing substantial funding.

Tariff for networked courses overseas is fairly big burden for us. For national universities, all the costs of online learning via satellite are covered by the government, so they are all right, but for someone like me, we have to secure the financial cost to start with. For example, my networked courses with Hanoi University, we need to use the ISDN circuit for 2-2.5 hours per class (including preparation time), so it costs around 400,000 to 500,000 Yen (2000 to 2500 pounds) for just a half term. We cannot charge Hanoi University, because the value of money there is very different, so we cover all
the expense. The courses are very well appreciated and have been highly acclaimed by them. So it’s worthwhile doing it. But unless I can find the funding body to support our networked courses or charge extra course fees to students, we cannot go beyond the level of experiments, after all. That’s why people need to explore something like Waseda Learning Square\footnote{Waseda Learning Square (WLS) was established in 1999 as a business venture. WLS provides lifelong learning courses to the public via satellite first and then on-demand. It is more commercial based.}. It is quite important to create the system to secure the income.

Some Schools in the university have an advantage in this respect because their subject areas may be more easily turned to commercial advantage and staff attitudes to digitization of their work may be very different. This seems to have been true, for example, for the School of Arts. Therefore the pattern of activity of different Schools involvement with DCC varies considerably with some forging ahead to develop the application of ICTs whereas other academic units, such as the School of Engineering Science appear not to have been involved. The professor at GITI commented on these points as follows:

Academics in the School of Engineering tend to think that we are experts on computers and if we want to develop something, we can. But once we start to try developing e-learning, many of us start to feel it’s ridiculous to spend so much time on the development and preparation by ourselves. The point is, when we feel like that, we cannot ask for help to others because we think that that’s our expertise. Well, this is just my interpretation of what is happening within the School of Engineering regarding e-learning, though... On the other hand, academic staffs in Arts easily admit that computer is not their strong point, so they can easily leave things to professionals or companies, if they want - not only hardware but software as well. Actually, lots of people from different companies related to educational materials (such as publishing companies dealing with electronic learning materials) are always visiting professors’ offices in Arts, so they can get some consultancy to make their contents even more attractive. For companies, Arts is a more promising market because of their diverse and rich contents. But for people like us, from the School of Engineering Science, we can’t make the contents very interesting. At most, we can present some illustrations.
to explain some concepts for better understanding. That’s all. Not much excitement and advantage in bringing engineering courses into a multimedia mode.

Working in a global context with ICTs can bring about very different culturally informed responses to their application. The significance of visual imagery is valued differently, for example, in different countries. As one of the interviewees in GITI comments:

The essence of networked courses is that we want to listen to their talk/lecture via ICTs. In order to understand how the lecturer thinks about certain issues, the image of their face is essential.... Probably this is not the case only with Japanese. For example, when I was watching real-time lecture by a Chinese authoritative 90 year-old emeritus professor on the screen some time ago, I thought it would be much better for someone else to talk on the topic instead of her, because she’s too old to speak clearly and we hardly heard her. But other Chinese academics told me that the most important thing is her image, her face. She’s giving the lecture – this is the most important thing.

It is primarily the use of ICTs to facilitate inter-cultural exchange which animates this academics interest in e-learning, as the following comment indicates:

Until a few years ago, lots of scholars from China visited me to learn distance learning via ICTs. We were certainly much ahead. Now things have changed and the table is turned over. Now I ask them to teach what is going on there. It’s astonishing to know their enthusiasm e-learning and they use satellite with a tremendous support from the government. Even for technical staff to create digital contents, the number of staff must be different from the Japanese cases. At the bottom line is there are actual needs of distance learning in China because of its geographic features and their education system. For them e-learning is the extension of previous form of distance learning. They’ve already had the foundation for distance learning to start with. Meanwhile, it’s not really exiting to conduct networked courses with some other universities in Tokyo, because if we want, we just visit the place physically, that’s enough. I can’t see the necessity to conduct e-learning in Japan. I prefer having networked courses with overseas
universities – this can justify the necessity of e-learning in a more reasonable way.

Reducing ‘time and space’ through ICTs rather than their pedagogical merits has been the main rationale informing the work of GITI. Perhaps this has been why its main collaborative links are externally focussed rather than internally developed within Japan. In developing teaching programmes in this context, however, the cultural issues of pedagogy are not left behind even if they are seen as less significant. The use of ICTs, in a way, simply brings these issues to the surface although the fact that the external focus of their activities is the Asia-Pacific region probably limits the extent to which this cultural dimension is problematic.

School of Human Sciences – distance learning programmes via on-demand

The School of Human Science began providing full on-demand e-learning programmes via the Internet since April 2003. It was not before December 2002 when completing undergraduate study through distance learning via e-learning was accredited by the Ministry of Education since before then they set the maximum of university credits obtainable via ICTs to be half of the total credits (124 credits for graduation - c.f. see chapter four) for university degree. This regulation change has led the School to launch full e-learning programmes.

The School of Human Sciences was founded in 1987 in Tokorozawa, Saitama Prefecture. It was restructured in 2003 and is currently comprised of three departments: 1) the Department of Human Behaviour and Environment Science, addressing the interaction between environment and people, 2) the Department of Health Science and Social Welfare consisting of study areas in social science and medical science, and 3) the Department of Human Informatics and Cognitive Sciences covering ergonomics,
educational technology, cognitive science, and communication science fortified with information science\textsuperscript{22}.

Because of the School's geographical location it takes nearly two hours to commute from the centre of Tokyo to it. The developments in e-learning were more than welcome to the School. Furthermore, the predecessor of the School of Human Science was the department of Educational Engineering (c.f. interview-based information), which means some of the academic staff at this School were already familiar with learning technologies before the DCC started. The school has its own well-equipped studio, which was recently renewed. These factors certainly contributed to the development of full on-demand e-learning programmes. Through DCC, they use an outsourcing host server developed and provided by NEC since it is stable and powerful so that it allows them to extend their courses on a nation-wide scale.

Although almost all interviewees of other Schools commented showed that they maintain some sceptical view about launching full on-demand programmes for undergraduate study, the School of Human Sciences started three e-learning-based programmes: Through document assessment and interviews via video-conferencing, the School accepted 1000 students in total for these courses in the academic year 2003. The programmes involve a class system, each of which comprises 30 students. One mentor/tutor is allocated to a group of 30 students apart from the main teacher. While it is often distance learning courses that are cheaper than on-campus study, students on these programmes pay the same amount of tuition fees as ordinary students physically attending programmes. According to the School, by limiting the number of the students, they aim to provide very well-tailored and well-guided programme with personal care\textsuperscript{23}.

\textsuperscript{22} From <http://www.waseda.jp/eng/academics2/human.html>.
\textsuperscript{23} From the brochure of the 'e-School' of the School of Human Sciences at Waseda University, P.2
The lecture parts of each course are made up of four sessions of 15-minute video-streaming, i.e. a lecture runs for 60 minutes. Although all e-learning courses at this School are in the form of on-demand, there are two types of recorded lectures – simple video-streaming classes which are the record of regular on-campus classes, and the ones which were taken at a studio set within the campus. An electronic bulletin board is used for question-answer sessions between students, tutors and lecturers during the courses. Tests are also prepared at each class and surveys are supposed to be conducted regularly to obtain feedback from students. These new radical attempts are derived from the experiences of the DCC for three years.

Initially, we were thinking about conducting e-learning classes as supplementary options instead of on-campus based classes. But once we attempted e-learning via the Internet, we actually could get better feedback from students and we proved that the actual educational effectiveness has been witnessed through the experiments at the DCC, although the burden on academic staff seems to be increasing.

At this school, two professors, who have been very keen on the application of ICTs to the actual teaching and learning, were already experimenting distance education with North Case Western Reserve University in the USA, before DCC started its experiments. They have used different kinds of communicative modes such as electronic bulletin board, computer conferencing and e-mail, etc. These experiences have endorsed their view that e-learning via the Internet can bring about educational effectiveness with reasonable level of communication and understanding in their own way.

In realizing full e-learning courses, it was obvious that academics would have to have extra work for the preparation for e-learning such as digitization of documents, handouts and visual images. They could easily predict that there would be a strong opposition to launch full on-demand programmes in the School. In particular, older academics who are not good at computers, were more concerned about producing digital contents. In order
to alleviate this worry, they have decided to make the most of technology advances. A senior lecturer commented:

If we video-stream the classes captured by professional camera clues (from Panasonic Language System) and students see them via broadband, there is no need to create power point slides or any other particular materials. As long as lecturers give us a lecture using blackboard, OHP, etc., the high resolution camera can capture almost all the details without any problems. Apart from the camera clue, we have prepared some people for note-taking of each lecture and they can create digital resources based on the notes, if necessary. So we've been trying to minimize academics' workload as much as possible. Of course, if academics are willing to create PowerPoint slides and record their lectures in a studio, it is also welcome. Some are using both styles of lectures for the e-learning programme.

As we have seen the previous sections, there is a strong tendency to heavily rely on the visual image in e-learning. The preciseness of the image, in particular, of the speakers is very peculiar to Japanese e-learning scene. The senior lecturer also commented:

Capturing and broadcasting the images of the lecturers are particularly important. The attitude of the lecturer who is actually talking to you increases the level of communication. The implications of non-verbal communication are so significant. That's why we've been particularly fussy about the high resolution of the courses.

Therefore, in order to participate in the programmes, students are required to meet some technical prerequisites such as securing broadband. The emphasis on the images of the figure is often heard through other interviews at Waseda University, but almost none of the academics are aware of the reason for this. For example, a professor of the School of Arts puts it:

I have never thought about the meanings of the images of lecturers on the screen until I was asked today. Well, yes, there is always a video-streaming of lecturers' face and voice attached to online learning content. Well, I wonder why... ... I would say when we
created the first contents for online learning in 1998, we simply
broadcasted our lectures via network. This has become a template for
our concept of online or e-learning since then without realizing. I
simply believed that this is online learning!

These subconscious attitudes of mind towards the forms of e-learning may be attributed
to the influence of the initial forms of teaching and learning with ICTs at Waseda
University as well as in higher education. The issues related to the importance of visual
images of the speaker in the Japanese e-learning scene are to be further addressed in
chapter nine.

Summary
This chapter looked at several different developments of e-learning within Waseda
University where the institution-wide consortium projects have been adopted. As a
whole, the trend has been one of adopting ICTs which relate to entrepreneurial goals but
are not entirely driven by entrepreneurial values. We have seen in many of the activities
the insertion of academic and pedagogical values and interests as well. Whilst the overall
direction of the University is controlled from the ‘top down’ academics still maintain
some degree of relatively autonomy, which has resulted in the creation of diversity in e-
learning across the institution.

The structure of the university can be usefully characterized by McNay’s (1995) models.
It is corporate in terms of a clear hierarchical structure which determines general policy
but this is modified and infused with a looser entrepreneurial ethos and devolved system
for academic units to choose their own way of achieving corporate goals. This aspect
means that there is considerable amount of freedom and responsibility for academics in
terms of the decision-making of the development of e-learning. This is obvious from
each case study within Waseda which illustrate how internally different the
developments of e-learning are in terms of forms, pedagogy and their relationship with
external organizations.
For instance, the School of Arts illustrates the successful collaboration with industries by creating the entrepreneurial opportunities for both parties—companies and the School of Arts to benefit. It is not always the case that entrepreneurial interests and pedagogical ones are mutually exclusive. There may always exist tensions between the two, and at times they may contradict each other, but it may also be true that they create a synergy that is mutually beneficial. Whilst the collaborators with the School of Arts have an interest in making profit from their involvement the academic profession was still able to improve the pedagogy of their work through ICTs and the ultimate beneficiary is their students. CCDL also illustrates another successful development of e-learning for cross-cultural and language studies by making the most of the university-wide consortium project. They focus on producing ‘global citizen’ through their programme, which is in accordance with the university’s strategy for globalisation and is currently playing a central role in the CUC project. However, in this example it is less clear that pedagogical interests play as strong a role as the issue of developing a global network. In this case, therefore, the concern to create global cyber lectures is driven by global ‘networking’ (possibly ultimately market concerns) rather than with an over-riding concern with the quality of the pedagogy used. In relation to the process of teaching and learning we can see further complexity in the overall picture. Whilst the School of Arts and CCDL illustrate how teaching and learning approaches have been transformed with ICTs the case of GITI highlights a particular use of technology as an extension of existing teaching practice. They use video-conferencing simply to provide their students with the opportunities to give and receive lectures in the Asia-Pacific rim. This technology also highlights the issue of cultural influences in the way which people respond to video-conferencing or images of the speakers. Policy is also beginning to impact on the pattern of ICT developments at Waseda. For example, in the last case, the School of Human Sciences, the deregulation of the university credit system in 2003 has led to the creation of a full distance learning programme. This School seems to make the most of DCC and is considered to be one of the first virtual learning programmes in Japanese higher
education. Unlike other campuses, the physical inconvenience of their location influenced their decision to launch the programme. In this sense, their 'place' does matters. It is also another interesting example where, despite the concerns for market share and profit which shape their circumstances, the School puts a great deal of emphasis on high quality e-learning by limiting the number of students working to any one tutor so that they can provide appropriate support.

This case study may seemingly fit into the concept of Castells' 'network logic', considering how the university uses ICTs to extend their networking to operate nationally and globally, balancing the central control and evolving nature of each academic unit. In the process, ICTs clearly play a significant role but not a driving role. As each case study shows, academics adopt e-learning in ways which also retain pedagogical values. As for e-learning, there are always critical views on it claiming that universities are trying to exploit ICTs to deliver higher education modules at a lower cost, which then leads to poor practice (Darby, 1994). However, it is not necessarily the case that conducting e-learning through a hybrid corporate-entrepreneurial model simply results in the commercial exploitation of higher education. Organizational culture in higher education is clearly different from that which exists in business and the industrial environment despite the inclination towards managerialism and commercial realities witnessed in universities. This is mainly because 'academics have loyalties to their profession, their discipline and their department or other subject unit' and higher education culture is still 'located in the shared value of commitment to scholarship' (Hannan and Silver, 2000: 79). Whilst this may be in a process of change, and to some extent undermined, it is still resilient and can renew itself even in difficult circumstances.
Chapter Seven

From peripheral to core change?:
Case study of University of Edinburgh

Introduction
Dearlove (2002: 263) argues that universities are ‘innovative when it comes to piecemeal and incremental change, but deeply conservative when it comes actually to implementing systemic change across the whole of an institution’. This claim captures the processes of developing and implementing e-learning at the University of Edinburgh (UoE). As an ‘old’ university, academics traditionally have a high degree of autonomy – in McNay’s (1995) terms it would be characterised as a collegial-bureaucratic institution. The space for academics to act autonomously allows them to explore the potential of e-learning for their own needs. This bottom-up approach towards e-learning can be beneficial for teaching, but the projects tend to be a small-scale and remain at a local level. Non-standardized e-learning can lead to the fragmented developments across institution and can be the cause of duplication of similar kinds of small projects and the waste of resources, labour and time. Under the circumstances in which research activities are often prioritised over teaching and support from the university is limited, the development of e-learning has been dependent upon individual academics’ enthusiasm. However, the landscape of e-learning at UoE is changing after the inauguration of a new Principal (in 2002) who is a keen advocate of e-learning. This has led to the formation of an e-learning committee group and the development of a strategy for e-learning. So the UoE is going through a rapid process of change. It has acquired an off-shelf VLEs and Web-CT as a standardized system across the institution. This chapter looks at the process whereby the bottom-up approach is now being rapidly transformed and e-learning, once on the periphery of university teaching is now becoming a core part of its approach.
The process of governance is central to the developments underway in the university. As Shattock (2002) points out, ‘collegiality’ in their management styles is witnessed among top ten universities in the UK and the UoE is not an exception to this. According to Shattock, collegial governance seeks consensus through committees and therefore it ‘involves sluggish decision-making that is conservative and biased in favour of the status quo at the same time as it is inward-looking and insensitive to resource constraints and to external realities’ (2002: 265). Since it can be indifferent to institution-wide concerns, it degenerates into ‘the selfish pursuit of narrow departmental advantage based on ugly lo-rolling coalitions of heads of departments’ which can be often witnessed in ‘new’ universities (Shattock, 2002: 265). This chapter illustrates the tension between the institutional culture of an ‘old’ university based on collegial processes of change in the new context of a rapid drive for institutional-wide change.

First of all, the initial vision of the central services regarding e-learning in the pre-new Principal period is examined. Following this, several snapshots of bottom-up developments of e-learning are illustrated to provide insight into the fragmented development of e-learning across the institution. After this, one exceptional case is examined. The College of Medicine and Veterinary Medicine (the former School of Medicine and Veterinary Medicine) is the only academic unit at UoE which adopted a top-down approach at a school/college level for e-learning. Their initiatives have been successful in terms of developing and implementing learning technologies for their own pedagogical needs. This section highlights the fact that the strategic approach can be beneficial but at the same time it can create confrontation especially when it comes to integrating certain systems within Schools and it identifies the elements of confrontation over technological systems. Finally, the chapter addresses the top-down approach towards e-learning and some of the obstacles it faces in implementing institution-wide e-learning initiatives. The argument made in the chapter reinforces the view that the adaptation of ICTs is deeply embedded in existing institutional systems and practices (Cornford and Pollock, 2003, Valcke, M. 2002; Liber et. Al., 2002). It therefore reflects
and reinforces the ambiguities and contradictions which pre-exist and inform how ICTs are used and deployed.

**Background to the case study**

The UoE is an ‘elite’ university which sees itself competing in a lucrative international market for research funding and high-fee paying students. In the globalised world of higher education the boundaries of competition go beyond national borders. This was aptly expressed in a comment by the new Principal at the UoE that 'the university has to be taken outside of Scotland'. In other words, the expectations and criteria for success have to be judged in relation to the ‘Ivy League’ of universities that operate in an international market. The new commitment to ICTs has a role to play in this development. At the same time, as competition is internationalised, universities in the UK have experienced a squeeze on their resource base over a number of years through relative reduction in state support and through increases in student numbers. The university has currently over 20,000 students with 3,600 international students from 120 countries. A major restructuring of the institution has been undertaken with the institution now organised into three Colleges: Humanities and Social Sciences, Science and Engineering and Medicine, with a total of 21 Schools.

Two distinct phases can be analysed in this case study. In the first, ICTs are peripheral to the main activity of research and teaching and have developed in a piecemeal way from the ‘bottom-up’. In the second, a more directive, ‘top-down’ approach is being taken in which the role of ICTs and e-learning is prominent. Thus, the university is undergoing a process of change in the achievement of a relatively institution-wide development of e-learning. The strategic shift may give the impression that e-learning issues have started to undermine the traditional institutional culture to some extent. However, this change is still in the early stages of an unfinished process. The emphasis in this chapter is on the pattern of adaptation and development of e-learning in the university and on a
preliminary and tentative assessment of the significance of the current changes underway.

The ‘bottom-up’ approach to ICTs

The institutional culture of the UoE – research-oriented, traditional devolved structures of governance and rather conservative - has allowed its academics to enjoy a high degree of autonomy in their research as well as in teaching domains. In this context, the majority of e-learning activities have been initiated by a small number of enthusiastic academics on an individual basis. In some cases, this has meant developing e-learning materials/ courses by themselves, and in others, individuals did it with support from central services such as the Media Audio Learning Technology Services (MALTS). By and large, e-learning activities remain on a relatively small scale, however, this provides academics with some opportunities to explore various kinds of possibilities in technological innovation. A flavour of these initiatives is described below. However, this pattern of patchwork development by enthusiastic academics does not describe the whole picture. To make the situation more complicated a college-based top-down approach is also evident in the College of Medicine and Veterinary Medicine. Interestingly, this has been successful in expanding the activities related to learning technology into the medical domain, but simultaneously, it seems to be a cause of tension between the two academic groupings in the College, which appears to originate from a sense of their different academic traditions. Before looking at these developments in more depth the role of the central support agency (MALTS) is described.

MALTS was established in 1998 as a part of the Academic Services Group in order to provide a high quality audio-visual and multimedia service to staff and students. MALTS is divided into three units, dealing with media and learning technology, video and audio production and technical services. They provide a range of services such as installation and maintenance of AV equipment, video production at studio and location,
video-conferencing, training courses, web site design and development, electronic course management and communication tools, multimedia library and resource collection.

In recent years, the number of staff at MALTS has significantly increased from six staff in 2001 up to present. Additional staffing means it is extending its role particularly in relation to e-learning. However, it only does a proportion of the development and in fact, works closely with other central services like the Library, Management Information Services and Computing Services as well as practitioners in each academic unit. The director of MALTS described the ways in which the organisation was working with individual academic units regarding e-learning as follows:

There are two direct ways in which we work with staff to build online learning materials, one of which is that we go looking for people, we don’t just sit and wait for them to come to us. It’s our job to go and find people. And because we get paid by the university essentially in proportion to the size ….. in other words, Science and Engineering, which is the largest faculty, pays the largest amount of money as the allocation to us. We, therefore, try to work with people in proportion to the extent to which they are paying for our services. On the other hand, we have an interest in trying to … not to have one area of the university way ahead of everybody else. … So that’s where we go looking for people and we try to encourage staff to come to us and part of that looking is because we participate in whatever occasions we can to get the message over, to say ‘we’re here’. And one good example of that is that all new academic staff have to go to a compulsory course on Learning and Teaching and we participate in that course and that’s a way of reaching new staff as they arrive in the university, from all over the university. So that’s one mechanism. The other, of course, is that people, for one reason or another, know that we’re here and come to us and say ‘can you help me build this, create that, update this’ or whatever.

MALTS serves each department or school regarding e-learning development except the College of Medicine and Veterinary Medicine, which have their own self-contained learning technology units. However, as the director describes (above) the central service did not have much influence over the development of e-learning at the UoE. There were,
of course, cases in which the ‘we’re here’ message reached some enthusiastic academics even with little knowledge and experience of e-learning and it turned out to be a successful collaboration.

The reliance on ‘enthusiasts’ has brought about a rich diversity in the forms of e-learning but at the same time, contributes to a fragmented situation for the overall pattern of institution-wide e-learning development. Nevertheless, this was not necessarily seen as an issue for the university. Even the director of MALTS commented:

I mean this is a very fragmented university anyway so that (technology or e-learning) won’t change anything very much. Everybody does what they want to do really, and if you look at courses now, there’s a large amount of variation between how people do it, without anything electronic. So this isn’t changing anything in that sense.

In order to respond to the diverse needs for support from academics while maintaining a high degree of academic autonomy, MALTS decided to promote a commercially developed Virtual Learning Environment (VLE). The director explained:

... there is, actually, a very large amount of activity going on and that’s why, in some respects, from the point of view of MALTS and the central service, the best thing that we can do for those people is to put the central systems up, like the Virtual Learning Environments, that they can build on and that gives them a stable place to put it and if they need help, they know who to come to and ask, but they may be perfectly able just to do it entirely on their own. Some departments have now got people in them who are moving all of their courses online. For instance the Management School has someone who took our WebCT VLE and has moved all of their courses online. So, although they used our systems and they talked to us in the beginning, they put about 90 courses on. We couldn’t possibly have done that for them. So it’s a symbiotic relationship. Without them we can’t make much progress but without us they don’t have a stable base to build on. It’s very comparable to email, in some ways. The Computing Service provides email but they don’t write your messages for you and we do the same, essentially, for many people.
From the point of a central service, ICTs are merely a tool - a part of infrastructure for the e-learning environment - and the systems of VLEs are a convenient template for e-learning which can bring about efficiency in terms of promoting and maintaining it within the institution. MALTS is exploring the possibilities of central support for academics with two parallel approaches – supporting diverse bottom-up projects and promoting standardization of e-learning using VLEs systems, which are expected to overcome the limitation of the UoE as a traditional large university. In the next sections, the experiences which some individual academics have had with regards to e-learning development will be described to illustrate the diversity of e-learning practice.

**Fragmented developments**

In an environment where the primary concern of many academics is in research and where developing e-learning is not necessarily rewarded, only a small number of enthusiastic academics have taken up the challenge of so-called “innovative teaching” in e-learning. Also, most individual academics’ initiatives have been conducted by those experts in computing or distance learning, and it was very rare to find an exception to this. In most cases, the bottom-up approach has been pursued by individuals who are able to tailor e-learning for their own purposes without significant help from central services.

This section looks at a few individual cases of e-learning to illustrate how diverse their interpretations of e-learning are and how differently their projects have been pursued. First, the case of the department of Chemistry is looked at as an example of a successful attempt at online assessment with the co-operation of the central service, MALTS. Following this, the case of the department of Architecture is described. I then describe the attempts made by a professor of the department of Meteorology, who is an enthusiast of e-learning and distance learning, to show how e-learning can be interpreted by
individual academics and developed in different ways in the circumstances where there is no central guidance from the university.

a) Computer-aided assessment

The department of Chemistry is not particularly advanced in terms of e-learning. Like many departments, it has course handbooks and lecture notes for the undergraduate on their web site which provides exercises with dynamic illustrations. The department also adopted VLE so that course organisers could access student feedback and activity through it. Above all, what is unique about the Chemistry department is their adoption of online (computer-aided) assessment, which has been a rolling programme starting in 2000 when there were major changes happening in the School of Chemistry. Following curriculum changes that were underway, Chemistry academics decided that they would like to have an assessment halfway through each of the half courses. At precisely that time, MALTS was trying to set up computer assessment within the university. One of the lecturers in Chemistry, who led the project, explains:

I was thinking when I was restructuring first year, I was aware that I really wanted to set up this multiple choice assessment and there was a note came round saying that the Teaching Learning and Assessment were holding a course on computer-aided learning and people should go if they wanted to. So I went to the Head of the Teaching Section in this department and said I think somebody should go and of course the answer always comes back ‘well, if you think somebody should go, ... just you go’, because it’s very much an individual thing... in this department, if somebody wants to push something new forward, then go and get on with it and then come back and explain it to the rest of us and tell us the financial implications and then we’ll see if we’ll go with it or not. And so I went to that but how easily I might not have gone and how awful it might have been to push this whole project forward had I not been and done that sort of thing ...

The relatively free atmosphere of the department in terms of decision making in e-learning allows an enthusiastic academic to pursue her interest. There are a range of
technological modes to choose and the lecturer was drawn to the development of online assessment. Essentially, the technological choice of online assessment is determined by the nature of the subject. The lecturer in Chemistry commented:

... because Chemistry is very much a subject that continually builds on the material they’ve had before, so it’s not like you can do a module and then forget it because you’re likely to have to use that material again in a subsequent course. It’s a good way for the students to be able to test their knowledge.... and just thinking about that persuaded staff that yes, it was a good thing. I mean I have to say the staff in here tend to be quite receptive. So if somebody’s prepared to go and put the work in, i.e. some idiot like me, will go and put the work in to get it working, they’re quite happy because they can see that there will be a positive result at the end of it and now they’re ... the ones who have contributed to it, and the ones who contribute to first and second year, understand that it’s worked well and that the students are happy with it and so I’m happy with it and most of the staff. I haven’t heard any complaints about it now it’s up and running and working smoothly.

Her attempt at developing online assessment has turned out to be successful with various favourable factors such as supportive colleagues, and a knowledgeable computer officer with a Ph.D. in Chemistry. In the meantime, MALTS were responsible for the programme and the computer officer did the interface in the middle to make sure that the Chemistry and the IT specialists from MALTS could communicate with one another and get the whole thing working.

b) Enriching online resources
The department of Architecture it is not particularly advanced in terms of the uptake of ICTs for teaching. For example, Architecture has traditionally used visual materials such as slides, which have been converted into a digital mode. Reflecting this tradition, the primary concern regarding e-learning at the department is enriching online-resources with the help of their own librarians. Teaching in the department actively involves computers in the sense of computer-aided design, multi-media, applications for 3-D
modelling and drafting. Thus, students are being taught computer applications but not in a particularly online way. One of the professor’s in the department perceives e-learning as the enriching of online resources particularly linking to his experiences in the department of Architecture and the fact that the university has placed an emphasis on the development of online resources, and active use of them but he tends to hold rather a sceptical view of the exaggerated claims for e-learning:

I don’t know really, I mean, I remain to be convinced, I suppose, that implementing on-line learning of one sort or another on a very wide scale would necessarily be a good thing to do anyway. I mean it’s not obvious to me that actually learning is necessarily drastically improved simply by using on-line resources. It depends on how you use them and what you use. And it depends a lot probably on the specific subject areas and things like that. So, I wouldn’t say that it was necessarily a good thing for the university to sort of wholesale decide that all departments should maximise their effort in, you know, using on-line resources because it is an intensive kind of thing to do, it requires a lot of time for somebody and it’s fairly expensive in that sense. ... So in a sense I think it makes quite a lot of sense to allow individuals to decide when from their point of view it makes most, you know, when there is most advantage to be got out of using these kinds of resources. But then the problem is of course that there isn’t necessarily enough support for the people to actually use them to best effect. So, it’s a difficult thing, I don’t know, I’m not exactly sure what the best way forward is, really, from a policy point of view.

However, the professor is aware that the needs for their own forms of e-learning vary according to academic disciplines, which a uniform and centralised service may find very difficult to accommodate.

c) Video conferencing and networked approach

Within the department of Meteorology one of the professors is an active advocate of e-learning. He established his own company after the success of Intrallect and Euromet, which are companies providing courseware to outsiders. In parallel to his attempt at the commercial application of ICTs for teaching and learning, he has conducted various
forms of e-learning – the development of courseware systems, the development of shared online resources, networked classes via video-conferencing, and so on. In particular, the use of video-conferencing for teaching is rare to find within the UoE or even across the UK. He describes his wide range of interests as attributed to the very nature of Meteorology. He puts it:

People (in Meteorology) were quite willing to give up resources. It’s much more common among the Scottish universities, sharing staff development resources. Now, I think there might be two reasons for that. One is that Meteorology is a subject in which people are already very familiar with international co-operation because all meteorological observations have to be exchanged between all countries, every day, for weather forecasting to happen. So there is the idea that we share with our neighbours. Within the Scottish universities, all the people, who could potentially share material, see the other people as competitors and they are in other organisations, which are competing with their own organisation and that’s not been the case with the meteorologists.

Thus, the nature of Meteorology essentially requires international as well as national collaboration. This certainly influences how meteorologists communicate through ICTs to share information and resources. For example, the professor has established a research group, the Open and Distance Learning Group, and within this, he has been involved in ‘The National Learning Network for Remote Sensing’ to explore the potential of video-conferencing for networked classes across institutions. It involves a series of video-conferencing seminars by arranging for important speakers once a month on a specific topic to share with people in all Scottish universities. In a context where the norm is competition between institutions this inevitably makes it very difficult to promote the concept of sharing lectures via video-conferencing. One interviewee refers to the compatibility between the specialised subjects and video-conferencing:

In Remote Sensing, what we were able to do was to say that there are 1 or 2 experts in the whole of Scotland, in certain areas, and rather than them only teaching the students in their own university, they can
teach students in the whole of Scotland and so it's good for very specialised subject areas. It's also good for very specialised subject areas in the sense of having to see things as they are happening and I know a lot of medical surgery lessons are done that way. I've taken part in video conferences where surgery has been going on which isn't always very pleasant but, as an example, you can get a lot more students very close to what a surgeon's doing than you ever can in real life. So it's still quite a specialist thing, I would say. There is no point in using videoconference lectures for everything.

In Scotland, particularly, universities have established Metropolitan Area Networks, which connect all the Scottish universities together so that every one of them is connected on a high-bandwidth connection. The use of video-conference costs is minimal except the initial cost of the installation of the system. This means that there is an incentive for the universities and staff to use it. The above are 'snapshots' of the type of activities academics have been inspired to develop. What is common to them all is that it has been the imperatives of the subject area that have been paramount and that e-learning has been identified as a resource for resolving some of the difficulties they face in teaching and learning. The next section looks at a more systematic process of e-learning development within a College.

**Top-down College approach**

The College of Medicine and Veterinary Medicine seems to be well integrated in terms of e-learning developments, however, in reality, there is a complex relationship between the two separate Schools of medicine and veterinary work. A strong sense of identity of each academic community could be advantageous for the development of e-learning with a top-down approach within the same School. However, it can also create tensions between the two Schools over the development of e-learning. This is in fact what happened once the two were merged into the one College. This section explores what kinds of factors propel Schools to develop e-learning through presenting the case of the school of Medicine and then, highlighting some issues regarding the introduction of a
top-down approach towards e-learning by focusing on the school of Veterinary Medicine.

Background to the School of Medicine
The Learning Technology Section (LTS) was established in 1999 to serve the School of Medicine. During the period 1998/1999, there was a major reorganization inside the Faculty and the people working for medical learning technology moved from a departmental structure to a divisional one while many of the departments were merged. At that time, the teaching division was also established in order to compensate for the orientation of the Faculty towards research. Within the teaching division two sections emerged - the Medical Teaching Organisation and the Learning Technology Section. Thus, through the processes of reorganising the Faculty, LTS, which has approximately 30 staff, began to play an important role in e-learning development in a co-ordinated way.

LTS offers a range of services, which can be categorized into four domains - medical illustration, IT services, courseware development such as CAL and CAA, and clinical / resuscitation skills.

a) The College of Medicine and Veterinary Medicine
The active uptake of ICTs for teaching and learning is mainly due to the nature of the discipline since medicine related domains have required relatively heavy use of technology, influencing the current situation in which medical schools generally are very keen on the uptake of ICTs.

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24 As one of CALs for clinical skills, ‘Blood Pressure’ is one of the first in a series of ‘virtual OSCEs’ (OSCE stands for Objective Standard Clinical Examinations) testing a student’s skill in taking blood pressure from simulated patients. Also, ‘PathCAI: Pathology Tutorials on the Internet’ was developed to help students to understand the basic pathological principles of disease.
Medicine, in the western world, is very much a technological phenomenon; drugs and surgical apparatus and scanning. It’s all science. It’s all technology. So it’s all part and parcel of what people are already doing. Plus there’s a general issue that when people put things together and certainly when we’re working, we have a ... we take the blended approach to using learning technologies. We’ll use learning technology when it’s the best and most appropriate way of doing something.

This receptivity towards technology has contributed to the rapid and innovative development of e-learning. Thus, several factors - their relatively welcoming attitude toward technology, top-down management regarding the uptake of ICTs for teaching and learning as well as training, and the existence of LTS - have been driving forces in developing their innovative learning technology environment, which meets their needs. For example, as far as courseware development is concerned, the LTS has developed a range of CAL products such as ‘Respiratory Anatomy’, whose aim is to teach the basic anatomy and mechanical functioning of the respiratory system to first year students25. LTC has also developed other more advanced learning resources such as a Web-based video streaming of a series of clinical skills videos, which students can access on campus as well as from home.26

As for the teaching and learning practices of Medicine, it is greatly shaped by external as well as internal forces. Medicine has to meet all the funding council’s (SHEFC in Scotland) requirements, the government’s legal and organisational requirements for training doctors and the demands of the National Health Service. In particular, the General Medical Council (GMC) issued a document in 1993 called Tomorrow’s Doctors and that was the spur that drove all courses in Medicine in the UK to reorganise as well

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as redesign themselves. As a means of co-ordinating this changing situation, an in-house virtual learning environment software system called the Edinburgh Electronic Medical Curriculum (EEMeC\textsuperscript{27}) has been developed.

EEMec has been tailored for the undergraduate medical degree course and has multiple functions such as discussion board and chat rooms, providing a more flexible learning environment but controlled by shared timetables. At the School of Medicine, every part of the course is mandatory for all students and it is only a matter of taking the courses in a different order. In a way, this environment allows the implementation of EEMeC in the School and the system has been extended to the School of Veterinary Medicine as well. While most departments tend to use commercial software like Web-CT, the School of Medicine has kept their own system. The senior manager of LTS explains:

The system is being absolutely developed in parallel and to meet very closely the way the course works, so it’s fun... the course and EEMeC are fundamentally kind of meshed together and the model I like to use to describe that is John Biggs’ idea of constructive alignment where every aspect of a learning environment is aligned and constructed to meet the outcomes and the assessment strategies. ... So things like WebCT and IVLE would certainly not be compatible. They don’t let you integrate modules together. You can’t share resources. You can’t build new things. ......it (EEMeC) is better for our course... better mainly means a context. WebCT for instance would be completely useless because it cannot do the integrated practice. It doesn’t give us the ability to change things. Its tools are fundamentally designed to meet a generic module approach to education, which is the norm in America and increasingly so in the UK but medical education is absolutely not modular. It is the total antithesis of that. ...The off-the-shelf systems meet a generic model of higher education...

\textsuperscript{27} EEMeC covers the new ‘Vision 2000’ curriculum introduced last year. Year 1 and 2 handbooks are available as online resources and subsequent years will be added as the new curriculum advances through the years. The system was developed as a collaborative project between the Medical Teaching Organisation (MTO) and the LTS.
Medicine requires very different academic disciplines from other subjects and is vocation-oriented. Even within the university, its existence is more independent of the university. The senior manager says:

> We will work with people of our kind and again if you're talking about institutional culture, our institutional culture is Medicine. It's not the university. And I go and speak to people in different parts of the university and it's like being in a different institution and particularly if you speak to the senior management. They're like a completely different world.

This remark is only from one of the senior managers of LTS, however, it shows how strong the sense of their academic community within the College. Several factors have made for a top-down approach towards e-learning in the School of Medicine, although this does not extend to the School of Veterinary Medicine in spite of the fact that both Schools are in the same College. LTS in fact, services Medicine and Veterinary Medicine and they have equal responsibility for both of them. Nevertheless, in reality, it is far from a picture of both Schools integrated in terms of the development of e-learning and there has been quite a strong resistance from the School of Veterinary Medicine towards this.

**CLIVE - Computer-aided Learning in Veterinary Education**

The School of Veterinary Medicine has its own learning technology unit, CLIVE, which was established in 1993, and is considered one of the earliest adopters of learning technology within the institution. Since its establishment, it has been providing integrated services of advice, courseware development (for Web, Local Area Network and CD-ROM), delivery and evaluation for members of the School, through building on the School’s existing expertise and infrastructure. Of all the different forms of learning technology, CAL has been a well-established feature of the veterinary student’s learning
environment since its micro-lab was set up in 1990. CAL materials are found across the curriculum\textsuperscript{28} and some of them use video within interactive programmes.

The director of CLIVE explains how they came to develop a series of CAL or multimedia resources:

UK higher education funding bodies do want people to share between universities and is prepared to put some money into that sort of thing, grant money, but they will give grants for people to do something in learning technology on condition that you make it freely available to other institutions. That was true of the original funding teaching and learning technology programme that set us going……..and for us, actually that's a better model than trying to operate as a business because we don't sell enough to keep ourselves, we depend on grants and contract work……

Resolving the funding issues is critical for the continuation of the production of multimedia materials. Establishing a consortium with other universities or linking with companies is often more effective in securing the money for a project. They established a consortium for funding including all the six UK Veterinary Schools, which was the start of the CLIVE project, and seven universities in Europe\textsuperscript{29}, Africa and Asia are Associate Members. CLIVE also coordinates courseware development, distribution and publication for their national and international members. Externally funded projects are undertaken to assist in financing the service.

According to the technical officer of CLIVE, one of the main difficulties for them to shift into a commercialisation mode is:

\textsuperscript{28} From BITS supple March 2002: 3
\textsuperscript{29} CLIVE participation in the European Veterinary Schools' SOCRATES project, producing 3 major CD-ROM on Skin Biology, with relevance for Biological Science, Medicine and Veterinary Medicine. European partners have been contracted for evaluation and translation into French and German. "Interactive Cases in Small Animal Medicine", a simulation of clinical consultations with ten initial cases was launched on CD-ROM at the Congress of the British Small Animal Veterinary Association in April.
It (going for commercialisation) is difficult. We do sell, in a sense we sell our products also to other universities, we have a sort of ownership scheme where the university can and gets everything that you produce and that’s another source of income...Outside, we make anyway, but the associate members who are overseas universities, get about 12. Overseas members who pay us the materials. But selling individual CDs, we haven’t been very successful at that, it’s quite difficult. ... the electronic learning materials require a different sort of marketing I think. Not to say it can’t be done, but it is difficult to find the right distributors. And the university hasn’t developed its own electronic commerce system, so you couldn’t sell direct from the web....and we didn’t really want the burden of dealing with individual orders as they came in and this sort of thing. So that’s why we went for external distributors but it’s not really been, wouldn’t be enough to keep one person employed.

In the pre-clinical department, at least half of the academic staff have been involved in the development of multimedia materials and in the clinical department 20-25 per cent. Thus, in this relatively free environment in the College of Veterinary Medicine, e-learning related projects also came from the bottom-up and the number of these projects was not so high that they could not cope with them. Therefore, the absence of an academic body which reinforces top-down management within the college has not been a problem.

There isn’t an academic body that says ‘we’ll do this one and not that one,....mainly I think because we haven’t had so many that we can’t cope....by and large it’s driven by the needs of the person that wants to do it. We haven’t either gone out or commissioned somebody to make something either. So it’s not particularly strategic in that sense, there isn’t a School view that we need materials in this area. We’ve talked about that from time to time but it doesn’t really come about.

This atmosphere has evolved over years and permeated into the school/college as a major part of their academic culture. However, once the School of Medicine and the School of Veterinary Medicine were integrated into the one College, their differences, that is, the sense of individual academic communities becomes a major hindrance in
terms of the development of learning technology at a College level. For example, the senior manager of LTC in Medicine describes the top-down approach toward e-learning:

"Our manager was an external appointee, which helped, and he has a very flat management approach. In a team, everybody has their roles and responsibilities and his is to be the Manager but that doesn’t mean he’s better than anybody else. It just means he has other types of decisions to make. And that flat, devolved structure works exceptionally well. It gives us lots of space to develop our own interests and to work towards excellence. We are not being forced down narrow paths. So, yes, that can work. It depends on the individuals concerned at the top being prepared to do that and being able to work in that environment, and the people who would otherwise be beneath and who would no longer be beneath, would be at the same level as or kind of at the same level as, the other need to be able to act professionally.

There is an impression that Colleges of Medicine and Veterinary Medicine enforce top-down management of teaching. However, one of the members of CLIVE comments:

"We do have a certain degree of top-down management of teaching in that we have a teaching committee and as well as that, we have departments within the department, is strongly influenced by what happens in the department so I don’t think it’s strongly controlled from above. So, it is more sort of collegiate, in that individuals do their own thing and for some things they come together and formally structure … for example, take CLIVE for example, a…. sort of co-ordinating role for projects… projects coming up from the grass roots…… “I would say I actually think that there are value aspects to the bottom-up approach in that people feel that they’re in control of what they do. It may be less co-ordinated but if they think they own it and it belongs to them they come together because they want to.

Whether they adopt a top-down approach or a bottom-up approach towards e-learning may appear to be the central discussion here, but the actual point is how the accumulating sense of academic communities interfere with the integration of two faculties in terms of the development of e-learning. For example, CLIVE started in 1992
and the LTS was established in 1999 and MALTS was created in 1998. This means that CLIVE has at least five years of experience in learning technology ahead of the others. The Director of CLIVE also commented:

> So we have our own ways of working established before they (LTS) came along, and they have come along, and they can do some things that we either can’t do or haven’t got time to do and that’s good, we can use them, but we don’t do or haven’t got time to do and that’s good, we can use them, but we don’t need them in the same way as other departments who don’t have CLIVE.

This sense of different academic communities within each faculty has been well recognized by the senior staff member of LTS and she refers to the difficulties of dealing with political conflicts across two faculties.

> ... I think they (CLIVE) could quite reasonably have said that they could be expanded to take on this role but it was decided not to do that. They actually wanted to start afresh, which means that they have got ... at least they could potentially be side-lined in a lot of issues, which hasn’t actually happened but politically, it’s complex. ... It is integrated but it’s complicated as well. In Medicine alone, it (LTS) is totally integrated. In the vets, it’s integrated to a degree and the degree it stopped is because of the existence of CLIVE and the CLIVE people stopping it going any further.

The reasons why CLIVE has resisted integration and co-operation with LTS seem to be closely linked to the sense of their academic, territorial distinctiveness. The learning technology officer of CLIVE comments:

> Principally at the moment, because of our resistance it actually serves medicine mostly. That’s really because they were established a long time after we were and we were deemed to be serving the veterinary side of things, so they concentrated on *the area where there was less development*, which was in medicine. ... But one area where they are working with us is in the development of an electronic virtual learning environment system. I think we feel we’re benefiting from
the resources that they’ve put in the last few years in developing the medical side, so in a sense we can pick up on what they’ve done without it actually costing us very much. I mean the cost of producing virtual learning environment from scratch is enormous...so having that done at a faculty group level is quite good.

As the technology officer of CLIVE comments, there are certain values in the top-down approach towards e-learning and each academic unit naturally enough wants to pursue their own pedagogic purposes in pursuing it. However, the strong sense of academic community which has developed over the years can conflict with more efficiency-oriented top-down approaches as in the case of the College of Medicine and Veterinary Medicine.

Issues in the bottom-up approach to e-learning

a) Communication and promotion

In a large university awareness of what support and possibilities exist for developing innovative technological approaches can be very significant. For example, as the Chemistry lecturer in the earlier example comments:

I think what I’d say to that is that this university has units in place, centrally, to help departments do it but I would query whether many departments are aware of just the level of help and assistance that you can ... that we can get if we ask. But this is a huge institution and it’s actually quite difficult sometimes just finding out what person you should contact because it’s always done by personal contact to set the thing up in the first place....I think sometimes where the problem lies is then identifying who, within this huge institution, can actually help you drive your project forward. I mean I count myself as fortunate. I happened to mention to somebody that this is what I wanted to do and they said ‘oh, speak to Nora at MALTS. She will help you’. Now that was correct but I mean when I think of how long otherwise it would have taken me to do this ... I mean it just doesn’t bear thinking about. And the same can be said for many of the central facilities this university has. It has lots of facilities but how many of us know who to contact in them? I don’t know. I think that’s where the bottleneck,
the problem lies and I don’t know how you get that information out to people.

Without a clear and focussed policy the role of central services, in particular, MALTS has not been hugely influential in terms of e-learning development. Their activities may remain as relatively minor and they need to publicise their service. The main form of communication and promotion of new developments may have to rely, therefore, on champions to publicise developments possibilities. The lecturer in Chemistry comments:

MALTS and the TLA asked me to speak to other courses that the university run, to tell new lecturers, for example, what departments such as MALTS can do for them and things like that. So they do now use me to go and say ‘here’s a successful project and this is how it happened and …’ other such things.

Thus, the lecturer in Chemistry has been playing a ‘champion role’ to share her experiences with MALTS in the development of online assessment at several workshops or forums. This is one of the successful examples of a part of e-learning which developed through the collaboration between academics, technical staff and central services. However, it is important to bear in mind that this is only a minor case. Furthermore, even though this project was supported by MALTS, after a certain period of successful implementation, the department of Chemistry was put back to a more independent position in terms of the maintenance and renovation of the system.

Having then found the project worked, and we wanted to take the project further than MALTS wanted to ... I mean MALTS can’t spend their whole time servicing Chemistry to do these tests. That’s unreasonable and that isn’t what MALTS should be about. If we want to take it much further, we understood that we would have to be able to get the questions into the proper format that the software, the question mark perception would be able to recognise, so to do that we had to then buy part of the licence to be able to get the software package, to get the CD and to get the paperwork to be able to do the whole thing. I think that cost about £600 but the teaching budget for the department paid for that because it understood that that was the
way it was going to have to progress the thing forward. So in hard cash terms, that’s been our outlay. MALTS funded the initial pilot and when it was discovered that we needed a new server to make the thing run more securely and more robustly, then MALTS also paid for that because what they’re hoping is that other departments will also use it and I know Economics are now starting to work with the same programme and so they will use that server as well. So the cost has been shared between the department and MALTS.

The aim of MALTS’ support is to provide initial activation of the project and put it on the right track and encourage each department/academic to keep on running it. MALTS needs to think about cost effectiveness by sharing the same system with other departments based on the success in the department of Chemistry. This is essential since the amount of work MALTS can deal with is very limited because of its small size.

b) Resourcing and flexibility

On the one hand, there is an issue of resourcing and, on the other, the complexity and diversity of curriculum areas requires a good deal of flexibility which centralised initiatives and support services may find difficult to accommodate. For example, in relation to Architecture as the earlier informant notes:

MALTS is all very well from the point of view of getting, you know, advice and so forth and they can do useful things like creating web pages but on the whole if you really want to create an on-line course or something like that or, you know, I mean, make substantial use of on-line materials or resources or something in a course, as in the case of the architecture and history situation, it usually requires considerably more resources than MALTS have got available. So, you know, its no good going to MALTS and saying ‘OK, you know, I want to create this course which requires 1000 slides to be scanned in’ and, you know, all the rest of it, because MALTS won’t be able to do that and so unless somebody in the department is available or there is money available to fund, you know, extra assistance or something then using these kinds of resources can be quite difficult. So obviously there is the possibility that one can go outside the university to get things which are already on-line. .... That could make quite a lot of sense I think, I don’t know, it might have to be
done in a more subject specific way because MALTS is perhaps too general and you need to keep track of the different resources in different disciplines and so on.

If there is no university guidance regarding e-learning, each department and academic takes their own way to develop new forms of teaching and learning experiences using ICTs, and from the beginning they try not to depend on support from MALTS. Therefore, collaborative development seems to be less realistic.

c) Staff motivation

Without a strongly resourced centralised service and a good deal of 'know-how' about how to go about e-learning it is difficult to kick-start developments from the bottom-up. As one enthusiast suggested:

If I were to put myself in the position of another member of staff, another member of staff down the corridor from here, those who might want to do online learning, I think they probably don’t get the support that they would need from MALTS, but I’m not too sure what support they would need because, for most academics, there is just a big hurdle to say ‘I’m going to go from what I’m doing just now to trying to use online learning more’. Most of them realise that it’s a big enough hurdle that they don’t have the time to devote to it and it’s not easy for MALTS to be in a position to say ‘we will make it easy for you’ because it’s not easy. The way it works in some universities is they say ‘we will make it easy for you because we will do it all for you’ and I just don’t think that’s viable. And MALTS is only a very small number of people at Edinburgh University. The best they can do is to make people aware of what options are available and give them some training on how to do things and encourage them to do it. And I think MALTS does a reasonably good job. You have to have an organisation like that in a university but, ultimately, the creation of online learning will come from the academic staff.

That is as may be, however, without some clear understanding or incentive to see how e-learning can facilitate and improve their work it is difficult to see how more widespread
momentum for change will gather. Moreover, in a university where the subtext for success is research rather than teaching more ambitious academics may not want to spend their time on relatively low profile developments.

d) Research culture: low status for e-learning?

A university culture which prioritises research may not generate the type of initiatives for academics that will extend the opportunities for e-learning. In a system where a good deal of external funding comes from research supported work the priority for online learning will always seem to be the ‘poor relation’. The professor of Meteorology comments:

I think the central organisation has to drive the ethos of the institution. Somewhere somebody has to say ‘we are making a policy decision that there will be online learning in every course in this university’ and then an organisation like MALTS has to be there to help people to say ‘OK, we will adhere to this policy’. But, traditionally, in the bigger universities, no one ever makes policy statements like that. It’s very, very hard to say everybody, across such a big university, will do that kind of thing. I think we might suffer in the end because of it. We might find that the smaller, newer universities are doing that kind of thing very much better but will that mean that the students go there rather than come here? Will they feel they get a better education because there is more online learning in these organisations? Or does it mean that they will reach students who would not normally come to a university? Is there another group of students who want distance learning, for example? I don’t know.

Before the academic year 2003, almost nobody expected that a university e-learning strategy would be drawn up by central services such as MALTS and the E-learning strategy group. However, in order to prevent further fragmentation and chaotic developments, this seems to be an indispensable process. Currently, the newly established e-learning strategy group is also concerned with the ethos of the institution through a strategy. Interestingly, successful experience in the College of Medicine and Veterinary Medicine, which has adopted a college-based top-down approach, is having
an influence over the development of an institution-wide top-down approach towards e-learning.

The new era of e-learning

Since 2003 the scene for e-learning has changed significantly. The e-learning strategy group has been drawing up a provisional e-learning strategy to find the most appropriate direction for the university. The university also established a short-life working group called Communication and Information Technology Committee (the C and IT committee) in 2001 to study specific topics of current relevance ranging from adequate application to the development of e-learning environments. The committee has a star-gazing group to examine long-term issues\textsuperscript{30} and has created a number of working groups for relatively short term issues. It also takes a more long-term view of how the use of ICT for all kinds of purposes in the university might develop and change. Thus, through such groups, the uptake of ICTs has started to be observed from a broader point of view across the whole institution. Furthermore, workshops related to e-learning course development have been run by the central services while a generous e-learning fund has been made available to academics to develop their courses. In spring 2003, there was the first attempt at an e-learning related conference at the UoE.

These changes give the impression that the university is drastically changing in terms of e-learning. However, in reality, the direction in which e-learning is moving does not seem to have dramatically changed. Rather than taking a different route to the institution-wide implementation of e-learning, the university seems to be being guided along almost the same lines, which is endorsed by the term which the director of MALTS used, a ‘minimizing diversity’ strategy. Promoting IVLE, in particular, WebCT, is one of the results of this approach. At the same time, in order to preserve academic autonomy in the domain of e-learning, the university is now inviting academics to compete for funds to support their e-learning projects. These changes are

\textsuperscript{30}See <http://www.uces.ed.ac.uk/ucinfo/ctees.html>
recent. However, little has happened so far to change the custom and practice of the period before 2003.

Having a university e-learning strategy is rather controversial for traditional universities like the UoE. There can be strong resistance from the academic side to the new top-down approach towards e-learning. In April 2003, the first e-learning open forum was held to discuss the possibility of a university e-learning strategy. Two years on from the first interview with the director of MALTS, he explained the significance of the forum as follows:

... the open forum that we had at Pollock Halls was, to some degree, so that we could take the thinking that we had, which was this thing about central services being devolved, and present it to the community and say ‘what do you think?’ And if they’d said ‘no, no, don’t go that way’, then we’d have had to have gone back and rethought but actually the reality was that that was the direction in which they wished to go. So that meeting was a consultation, if you like, about the embryonic strategy that we already had, this idea that there would be a central service supporting activity out in the colleges and it was to discuss that and to test that, that was the view, and it was. So that actually therefore did become the strategy. It isn’t the tactics because I mean once you’ve got that strategy that says it will be done by having a strong central service that provides infrastructure and the bulk of the activity will take place out in the colleges, you still actually have to have tactics about how you make that work. I mean how big is the central service? How much money does it get? How does it interact with the colleges? How do the colleges find the money and how do they manage themselves to support e-learning where they are, is a whole set of tactics that ... and those are not yet fully elaborated.

It is obvious that the institutional tradition would not easily allow academics to adopt a top-down approach towards e-learning. The current provisional university e-learning strategy was written by a small group of people who were the main members of the e-learning strategy group and the director of MALTS is drawing up the strategy. The strategy was developed out of a series of meetings and the discussions they had in the
academic year 2003. But they needed an opportunity to confirm whether they were on the right track.

As the director of MALTS mentioned, the power of the central services is not that significant. The introduction of a university strategy may suggest the possibility of a top-down approach in e-learning, however, the responsibility for the uptake of e-learning is basically left to each College, not the central services. Here, another new problem is emerging. The director of MALTS refers to the tension between central service and college governance:

... the colleges, Humanities and Social Sciences in particular, which of course got the ragbag of all the ... you know, it got Arts, and Social Sciences as big faculties but it got all these others like Law and Music and Education and Divinity. It actually doesn’t ... They never even thought about how to deal with e-Learning. And Science and Engineering haven’t either really despite the fact that they’re quite techy. And so those two colleges are struggling with how to manage the e-learning process inside them, because I sit on the e-Learning group of each of those colleges because each college has an e-Learning Group and actually Humanities and Social Sciences hasn’t managed to get its group together yet. Science and Engineering managed to get its group together and actually there’s a tension between, interestingly, actually within the college in Science and Engineering, there’s a tension.

Thus, a tension within the college is newly emerging through the introduction of a university e-learning strategy. In particular, the two Colleges - Science and Engineering and Humanities and Social Sciences – clearly seem to have this central versus devolved tension.

I mean the college (Science and Engineering) actually has a group, an e-learning group, that has representatives from all its areas but what’s quite interesting watching that group is that they have this central versus devolved tension too because the college has a view that says ‘we must manage all this and we should standardise in the college’.
And the schools are saying ‘no, no, we can’t standardise. We all have to do our own thing. We are all different.’ So, interestingly, this central services versus the colleges, standardisation versus diversity, is actually repeated inside the colleges and I think actually that HSS (Humanities and Social Sciences) will say the same. When HSS gets its group together, from a college point of view, there’ll probably be a desire to have something, which is centralised and standardised and managed and the schools will all say ‘no, no, you can’t possibly do that. We’re all different.’ …… you know there is this tension in the colleges. It’s not just a central services versus the College’s tension. It’s a tension within the colleges. To what extent is the college the centre and then the schools are the periphery? And there’s a … the college wants everything to be done one way because it’s easier for it to manage, and the schools all want to do it their own way.

What is following as a consequence of introducing a university e-learning strategy is the Colleges and the Schools will have to work out how they are going to implement the strategy since the provisional strategy says the Colleges are in control of the Schools’ e-learning and teaching developments. In this sense, the strategy, in fact, means nothing very much at the level of individual academics except in the College of Medicine and Veterinary Medicine. To a large extent it has resolved this problem long before the academic year 2003.

Although the change in the e-learning environment has just started the crucial problems are within each College and School, and within each, a tension between Colleges and Schools emerges and possibly, after that, another confrontation between schools and departments. This actually highlights rather endemic features of organizations of this size and diversity, not peculiar to higher education institutions. In spite of the new strategy, the roles of MALTS remain almost the same. The several parallel movements will continue for the following few years – posing questions to the Colleges regarding how to respond to the strategy to stimulate a top-down approach, and promoting standardization of e-learning through Web-CT but encouraging individual academics through e-learning project funds to explore the possibility of e-learning in the UoE.
Summary
The route to the development of e-learning at the UoE has been complex and has taken mixed approaches – bottom-up in most departments and a top-down approach in the College of Medicine and Veterinary Medicine. In both cases, what is obvious is that some enthusiastic academics and technical officers try to create the effective teaching and learning environment with ICTs and tailor their e-learning projects for their own purposes.

In an environment in which there was no university e-learning strategy, the notion of networked university is not permeated within the institution and these non-standardized ICT developments in e-learning has made the current state of fragmentation of the institution even more obvious, although such conditions may be part of the institutional culture which allows academics a high degree of autonomy. Many academics identify themselves with the academic units they belong to and often not with the institution since their commitment is so strongly to their subjects or departments. The problem of this situation, as Richie (2003) points out in his e-learning report on the UoE, is that there is a great deal of duplication of effort. Lack of liaison amongst academics and technologists regarding experiences of developing e-learning may often lead to waste of time, labour and money and end up being very inefficient.

Since the new Principal came to office e-learning development has been stimulated and a provisional e-learning strategy has been drawn up. Considering the argument of Collis and Moonen (2001) that the initiative is often limited to the individual practitioner if no decisions are taken at unit, faculty or institutional level, the introduction of an e-learning strategy at the UoE seems to be a right decision in terms of promoting institution-wide development of e-learning. However, since a relatively homogeneous College like Medicine and Veterinary Medicine has conflicts arising from its members’ strong sense of belonging to different academic communities, we have to ask how other more
heterogeneous Colleges will deal with the newly emerging structure of the university and different approach towards e-learning?

The tension between Colleges and central services like MALTS is inevitable in the process of implementing an e-learning strategy and the same pattern can be seen in different frameworks – Schools within Colleges, departments within Schools and possibly even individual academics within departments. This devolved tension is peculiar to a large scale organization. However, unlike commercial companies which can pursue relatively straightforward ideas of efficiency and productivity, universities have a much broader range of aspirations and responsibilities to take into account and issues of efficiency and productivity are more complex to define.
Chapter Eight

Standardising e-learning: a top-down approach at Robert Gordon University

Introduction

At Robert Gordon University (RGU) the development of e-learning has been driven by top down initiatives across the institution. Whilst this approach has made an impact on the breadth of e-learning activities it too raises various issues in the development and deployment of ICTs. One of the tensions evident in this case study is that between managerial imperatives for a standardised, efficiently delivered system to compete in the global market, with concerns by academics to temper developments with pedagogic interests and values based on their experience of teaching and learning in different subject areas. It has been pointed out that there are ‘tensions between the logic of managerial control and the conventions of professional autonomy’ (Deem, 1998: 52) which ICTs can become implicated in. Moreover, universities are complex organisations with a plurality of academic interests which are not all easily married with e-learning. Whilst for some academic units it may create opportunities to establish a new identity and position themselves in the market place for others it may have the opposite impact.

This chapter highlights tensions between top-down and bottom-up processes of implementing e-learning and the potential clashes between pedagogical values and managerial ones in the process. The first section of the chapter examines the background to RGU in order to contextualise trends. Thereafter, three different experiences in different academic sectors across the university are compared to illuminate the development and deployment of e-learning and its implications.

Background
During the late 1980s and early 1990s higher education institutions in the UK were merged to improve efficiency and achieve economies of scale and former polytechnics, like RGU, were promoted to university status after legislative changes in 1992. The university is located in an area rich in industries such as oil and fishing and has strong ties with local as well as national industries. It has three Faculties: the Faculty of Health and Social Care, Aberdeen Business School/Faculty of Management, and the Faculty of Design and Technology. Each Faculty has five, ten and four Schools respectively.

The university claims it is ranked the top university in Scotland for graduate employment due to their dedication to professional, work-linked education. Their vocation-oriented education derives from their former polytechnic days and this tradition of technical education has contributed to their ability to thrive, through e-learning, in the competitive higher education market. Geographically speaking, their student market is limited – Aberdeen and the Highlands and Islands of Scotland have been their main constituency for students. However, through ICTs, the university is now reaching a wider community; at present, approximately 12,000 students study full-time, part-time and through sandwich courses at all levels mediated in part by ICTs (Robert Gordon University, 2003/2004: 7). However, the number of virtual students has increased to over 10,000 members from 109 countries as of 2004 (Robert Gordon University, 2003/2004: 11) and the university currently offers 25 distance e-learning courses.

32 RGU describes itself as 'a progressive and dynamic university with a clearly-defined vision for the future needs of all its students' (Robert Gordon University. The Annual Review 2003/2004) and focuses on ‘encouraging enterprise, innovation, discovery and creativity’ as one of their commitments. Its Virtual Campus is considered as one of the first e-learning provider to be accredited with the British Association for Open Learning (BAOL) Quality Mark, which recognises both the quality of the courses on offer and the commitment to learner support. Furthermore, RGU has received a Commendation at the Winners at the Web Awards in recognition of the work done across the university in its delivery of web-based information and services. The university was selected as one of the four finalists in their category for the ‘Best Large Business Award’ being recognized their achievement of their new RGU Web Site, the Virtual Campus and the Faculty Intranets (iNET).

(See W@W2002 Award, <http://campus.rgu.com/campus/news/start.cfm?CFID=365757&CFTOKEN=15946...>)
33 From <http://campus.rgu.com/campus/catalog/index.cfm?CFID=365737&CFTOKEN=158...>
Successful management of the institution in recent years has enabled its physical growth—a new investment of twenty-eight million pounds for the technologically state-of-the-art building for the Faculty of Health and Social Care, and a further investment of more than ten million pounds for a new Sports Centre are indicators of this. This rapid expansion is testament to their successful management as an educational institution in recent years. In terms of McNay’s (1997) model RGU could be characterised as an entrepreneurial-corporate university. Another interesting aspect of RGU’s entrepreneurial abilities is the encouragement of the development of a company, Univation Ltd, which is responsible for the marketing and management of a large proportion of their oil and gas activity; it recently received the Queen’s Award for Enterprise.

E-learning initiatives at RGU

The following e-learning activities are referred to later in the text because they provide insights into the processes and issues involved in developing and deploying ICTs in this context. They are not intended to be a comprehensive account of all such activities taking place:

- iNET is an intranet system developed ‘in-house’ which is available to campus-based students. It was originally pioneered by the university’s business school and is becoming the model for intranet facilities across the different academic units across the university.
- Virtual Campus is a university wide e-learning system which is geared towards distance learning students only. The Virtual Campus is a virtual learning environment that allows distance learners to work at their own pace at a time that suits them. The system of Virtual Campus and iNET are not technically compatible but the process of discussing ways of integrating the two facilities is underway.
- Graysnet is an e-learning system tailored to the needs of the Faculty of Design and Technology.
- Studiospace is an e-learning system in the same faculty which was designed for distance learning courses.

34 For example, the RGU forms a network of alliances with associate and franchise colleges and primary and secondary schools, which is unusual for old and traditional universities.
• The Centre for the Enhancement of Learning and Teaching (CELT). The central services play an important role in supporting ICT related activities. For example, the Information Technology Services provide and maintain the university-wide information infrastructure and organise relevant staff training and development courses.

• The library also facilitates e-library by participating in the higher education resources on demand project (HERON), which involves digitising texts for the students so that they can access the lecturer’s recommended reading and print it out. CELT is in charge of learning technology and pedagogy and plays an important role in e-learning initiatives.

• The Centre for Open and Distance Learning (CODL), which was originally established to develop and support Virtual Campus, has merged and is now co-located with the newly established Department of e-Learning (DeL). (NB.) The interviews with the staff from the central services were conducted before the establishment of DeL, therefore, the informants linked with the central services are from CELT and CODL, but not from DeL.

The university’s vision and top-down approach

The university had a relatively rich experience in the use of ICTs for teaching and learning even before the boom in e-learning emerged. However, initial attempts were fragmented and most were bottom-up initiatives. As the senior educational development officer of CELT puts it:

The use of ICT in teaching and learning hasn’t just come off as something we started two or three years ago. Take people in the area of Architecture, Art and Design, they have been using software, computer-aided design packages to support teaching and learning in their own domains or disciplines. However, the push for everybody now to start using ICT in teaching and learning is one that is of recent history and that absolutely came on board after 1997 when the Dearing Report came out.

The vision for higher education described in the Dearing Report (1997) was viewed in the context of RGU and reflected back as an institutional strategy.

We do have a very clear vision. The university’s strategy is now clearly set out for two reasons. Firstly, our geographical location does not particularly place us in a high density population area so
our student numbers are quite low and the only way we can make them up would be to use online learning to get more students on board. Secondly, having put all this infrastructure in place, we are making sure that students that are produced from RGU have the necessary skills to be able to function in the knowledge economy, in which we think, without ICT skills, no person can absolutely compete favourably, but in addition to that, part of equipping our students with ICT skills means that they become highly employable and if you look at the results that we’re having in terms of student employability rate across the United Kingdom, RGU now, for the past three years that the Financial Times has been running what you call league tables of employability, RGU seems to be at the top, again.

E-learning and a specific student market have helped the institution survive and grow to their present capacity. In some respects this view echoes Castells (1996) position that to respond to the knowledge economy, or network society, people are required to be ‘self-programmable labour’ fully equipped with information technology skills. RGU is now reaching out to a global market with the rapid expansion of modularized courses and the ‘transcending power’ that ICTs bring to organisations, i.e., transcending in that they breakfree from the constraints of place (Castells, 1996). The same person as above comments:

We really need to be prepared to grab part of our own market share in the world environment, if not within the United Kingdom, take on board all the skills development and actually move education or teaching and learning into the 21st century.

To upgrade its e-learning activities the post of senior educational development officer was created in 1998 and, in the following year, the institution-wide Virtual Campus was launched to support distance learning courses targeted at an international market via the Internet. In 2001 the Aberdeen Business School (the former School of Management) developed its Faculty Intranet (iNet), which is now used to support on-campus teaching and learning and is being rolled out across RGU’s three faculties.
This enthusiasm for e-learning has not been developed without serious consideration about some of the pedagogical issues involved. It can be quite easy to be attracted to technological change without working through their contribution to processes of teaching and learning. For example, the senior development officer puts it:

Being a new university, a university that is innovative, a university that is forward looking, yes, we’re using that particular vision to drive the university forward in the area of e-learning, which is very, very good but this is the caution. When you get such a new or when you get such an innovation, it’s always good to underpin it with quality and best practice because there is one thing that I call ‘selling the hype’.

E-learning, in particular distance e-learning, is often the target of criticism - it appears to provide an ideal example of the commodification of educational knowledge - exemplifying the automation of low quality university degrees as described in Digital Diploma Mills (Noble, 2002). In order to avoid this kind of criticism, the university has developed systematic quality assurance measures. For example, the Department of Academic Affairs deals with quality issues and has drawn up guidelines for distance learning courses, while the Department of e-Learning has been involved in validation of courses as well as checking to ensure the academic quality of the materials. Furthermore, they have adopted guidelines from the national Quality Assurance Agency and use them as benchmarks. One of the recommendations in the Dearing Report (1997) refers to the lack of relevant ICT skills to support teaching and learning among staff in higher education. This is important in order to compete favourably on a global basis. Therefore, the government has introduced initiatives to support teachers in this area; RGU has taken the opportunity to pursue staff development by acquiring funding for it and to maintain the competency of all academics involved in e-learning to a greater or lesser degree. RGU’s forward-looking attitude and top-down approach has been the major driving force in their attempt to be the leading institution in the domain of vocational and
professional education through e-learning. This approach and some of the issues it raises are examined next.

The issue of quality assurance generally, as well as in relation to e-learning, can also be seen in a more critical way since there is a strong tendency that checklist measures of quality are becoming the ultimate issue for the university. For example, Readings (1996: 21) argues that ‘Excellence is rapidly becoming the watchword of the University’; a mantra that lacks substance. He argues that such measures like quality assurance are ‘an internally defined unit of value that has no external referent’ 35. The discourse of excellence is easily incorporated into corporate culture since ‘the question of the University is only the question of relative value-for-money,’ rather than some intrinsic quality of learning. In this context students are situated as consumers simply seeking a degree to compete in the job market and the measure of success of a university the extent to which this occurs. (Readings, 1996)

RGU initiatives in e-learning are driven from managerial directives rather than being products of independent academic initiatives, that is, processes occurring from the ‘bottom up’. However, the dichotomy – top-down and bottom-up - requires careful attention because in reality blurring between the two often occurs. For instance, RGU has a university strategy for e-learning which is reviewed on a yearly basis by the Board of Governors of the university. The initiatives in e-learning are based on their development of strategy, but this has been informed from the bottom up by people like staff of CELT who feed into this process. This is because the university needs to grasp what academic staff members need.

35 Readings (1996: 27) argues that ‘excellence serves as the unit of currency within a closed field since the survey allows the apriori exclusion of all referential issues, that is, any questions about what excellence in the University might be, what the term might mean. Excellence is, and the University might be, what the term might mean. Excellence is, and the survey is quite explicit about this, a means of relative ranking among the elements of an entirely closed system. Excellence is clearly a purely internal unit of value that effectively brackets all questions of reference or function, thus creating an internal market’.
At its best the university's strategy involves a kind of virtuous circle with bottom and top down processes mutually reinforcing and informing each other. Furthermore, once the university reaches the stage of implementation in each subject, course content comes from the bottom up, but mediated by the central services through staff development courses and support systems. Thus, the dichotomy between top-down and bottom-up may not capture the interactive processes which the development of e-learning has gone through. The senior development officer explains:

It is lecturers who actually are closer to students, know what the students want. Not the management. So lecturers who actually know the requirements of the students, know the capabilities that they want to develop in the student, are now the ones who are driving this learning. However, to enable us to move forward, we will still need a sort of partnership approach, whereby if we need the resources and possibly an even wider vision to lead us forward, we might be looking to the top to enable us to do that but a real hard-grind job is being done probably by the bottom level and then moving it upwards.

However, the process of development of e-learning does not always seemed to have occurred through the virtuous circle described above. This is reflected in problems which have arisen over the standardisation of technological platforms for distance e-learning. The initiative of the Virtual Campus was a top down directive from senior management which contradicts the trend described as a virtuous circle. This initiative has raised various problems and issues about its integration with the existing iNet facility which still remains to be resolved - an e-learning system which had evolved out of the interests and needs of academics in the Aberdeen Business School.

For the past few years the university has been trying to integrate diverse technological systems for more efficient management purposes by adopting one standardised system. The consequences of the existing dual system are explained by a senior lecturer:
There's a dilemma between separating on-campus students and Distance Learning students and there's certainly a dilemma there in that they use different systems. A lot of effort has been put into developing the iNet for on-campus students and it's a good facility. There's no doubt about that. The students do value having that system so that's great. For the department, the iNet is very useful and people use it a lot and find it very useful for getting information to students. I use it very little... because I don't teach on-campus students very often. I'm responsible for distance learning courses so most of the students that I teach are at a distance so they can't access the iNet. They have to go through a Virtual Campus. The Distance Learning students can't actually access this facility. The Virtual Campus has not been developed in the same systematic way as iNet.

Thus, there has been a technological divide in the platforms used which also creates an information divide between different categories of students. It may not be necessary to share all the information over the systems between on-campus students and distance learners. However, this technological divide might have prevented people from having the benefit of the 'network' such as sharing information, particularly in the area of administrative information and other online resources. In order to achieve standardisation of the different technical platforms senior management have two hurdles to overcome – 1) integrating separately developed in-house systems for on-campus study across the university by imposing the use of iNet as the institution's intranet, 2) integrating the system for distance learning, the Virtual Campus, and iNet, the system for campus students. However, in reality, the idea is temporarily on hold because of institutional politics which are driven by different goals identified by different groups of professionals such as academics, senior management people and learning technologists.

The issues involved in developing e-learning initiatives can be explored by looking at the experience and concerns of different academic sectors within the university. In the following sections three distinctly different experiences of the development and deployment of e-learning are described. The Aberdeen Business School is a case of a clear match between the aspirations and vision of RGU and this academic unit; in this
case the virtuous circle of top-down and bottom-up processes works well. But this experience is not generalisable across the university as a whole. The Gray's School of Art illuminates issues of incompatibility between this unit and the attempts to standardize e-learning whereas the third experience, that of the School of Nursing and Midwifery, identifies difficulties with turning distance learning courses to online ones. These comparisons illustrate, therefore, conflicting pedagogical interests, cultures and educational purposes within the university and how they are reflected in relation to e-learning. The attempt to standardize the technological platform at RGU is problematic because underlying the tension between managerial demands for efficiency in the system and the plurality of academic interests are diverse values that are not easily reconciled. In some respects, therefore, the top-down approach seems to create as many problems as it resolves.

a) The Aberdeen Business School (ABS)

ABS is one of the largest business schools in the UK and provides over 3,000 students with management and professional education covering a comprehensive range of courses. Currently it is structured into nine departments: Accounting and Finance, Business and Management, Economics and Public Policy, Law, Information Management, Communication and Languages, Marketing, Human Resource Management, and Hotel, Tourism and Retail Management. Associated with the departments, there are a number of satellite applied research centres in the field of entrepreneurship, knowledge management, tourism, public policy, and transport policy.

The ABS was the School of Management until 2003. Under strategic management it has been successfully expanding in terms of the numbers of courses and students. Amongst all the schools, it has been this academic unit which has provided the largest number of full e-learning courses - 15 out of 25 courses. There are two streams of e-learning at

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37 From <http://campus.rgu.com/campus/catalog/index.cfm?CFID=365737&CFTOKEN=158...>
the Aberdeen Business School – 1) iNET for on-campus students, 2) Virtual Campus for distance learners and industrial clients. While the Virtual Campus was developed using a top-down approach at an institutional level, the development of iNet occurred at a school level since it is closely linked with the arrival of a new Dean who also serves as vice Principal.

When we moved to the faculty of management, it was that time when the dean himself really pushed for faculty intranet to use as a learning resource. And he apparently went to Harvard University in Boston, and saw the system they had there and thought that it was fantastic.

After this, the vice-Principal managed to obtain some money to develop their intranet system, iNet, which was relatively rare in UK universities around 1997. It then became standard practice that all lectures had to be on PowerPoint and all had to be delivered via iNet.

In addressing their development of e-learning, it is important to note the significance of top-down management at a school level. To develop new e-learning courses by obtaining central money, all the schools and departments produce plans that are supposed to accord with the university’s strategy and help the university to meet its strategic goals. A staff member who is one of the enthusiastic developers of e-learning courses comments:

RGU’s biggest market is the Highlands and Islands of Scotland. That’s the local market, which is the biggest geographical market. We tend to have more from that area, because we are very vocationally-focused. — Aberdeen isn’t necessarily a popular geographical destination for international students. But I think we are very active internationally and that’s partially a strategy of senior management in identifying key blue chip partners.
Thus a number of links have been made nationally and internationally with corporate interests outside of the university. This new relationship with industry allows the university to explore the opportunities for e-learning training courses. The partnership with external organisations – in Kazakhstan, Nigeria and increasingly work in China – has become one of their advantages. Moreover, the ideological fit between entrepreneurial values of the Business School and the potential market outside the university is capitalised on. For example, the establishment of Univation, a company set up by the university to promote commercial activity and consultancy, also helps the School to develop e-learning training courses for industry. In addition to this, the School has a support unit, called the Open Learning Unit, which provides Business School courses while working with commercial companies – for example, some contracts with national air traffic control systems, or British Airways, although not all the courses are online, some being paper-based.

The corporate-entrepreneurial style of the Business School is currently well-integrated into the university strategy as a whole. The fact that ABS provides the largest number of e-learning courses within the institution implies that the School is successful in winning central money in the university for e-learning developments. In order to win development funding, applications go through a kind of bidding procedure to the university’s board indicating how their new e-learning course will attract a big enough market. The advantage for ABS is that the head of the School is also the vice-Principal for the university. Therefore the projects which are supported at School level mesh closely with the broader aims of the university. This means success for ABS, but it also introduces an element of disparity in the distribution of resources when other academic units have more difficulty making their area of work fit with the wider university strategy. For example, one of the technology officers explains why there is a disparity in the way e-learning courses are developed across the university as follows:
...the Vice Principal for the university, he’s also the Dean of the Business School, which I think is why there’s a lot of courses from the Business School on the Virtual Campus because he’s been very committed to supporting the development of the online learning environment and he’s been very active in letting people know that this project has his backing and that people should be thinking about developing materials for it. — it’s important that we have a good working relationship with Vice Principal and without that, I think it would be really difficult because he can take concerns that we have to top level management and try and resolve them because often it does take someone from a senior level to sort issues out at the university. However, sometimes it can work the other way and if people feel they’re being pressurised too much from top-level management, it becomes a problem.

Certainly, the adoption of top-down approach works for the university to develop e-learning systematically. However, there are problems accompanied by the top-down approach. The alliance between the Business School and senior management has clearly facilitated a closeness of vision between initiatives in the former and their subsequent backing by the institution. But this relationship may show ambivalence as the quote indicates, it can lead to problems and staff feeling pressurised. Therefore, support can also feel like control and regulation.

Apart from accessing development funds, there are several ways to obtain external funding. The Business School is also better placed for this, compared to other academic sectors in the university. In the attempt to deliver e-learning courses, there is always a problem in terms of the content – the adaptability of the course content itself – in foreign countries. At the Business School, several measures have been taken so that their courses can be adjusted. A senior lecturer in the Business School explains:

I’ll give you one example. This is when we had the paper version, which basically formed the basis of a franchise agreement in Calcutta where we had Indian staff teaching our course. These were the modules they were teaching. But there were cultural adaptations that had to be made, particularly in terms of things like assessments, and we were hoping that had that continued, there would be a lot
However, he confidently describes the successful implementation of their e-learning courses in a global market as being mainly due to the quality of their contents with careful adjustment such as cultural adaptation as well as several quality assurance procedures. However, whilst RGU staff seek to maintain the quality of their courses, there is no doubt that they develop e-learning courses with market determined criteria. The same interviewee states:

There is a university marketing system and we have our own marketing within the Aberdeen Business School and there has always been a little bit of friction saying the university does not market us in our own way. So if you like, we got rid of the faculty of management and created our own brand in terms of the Aberdeen Business School, with aspiration to be in the top 10 business schools eventually. — I mean we stole the march because we copyrighted the name of Aberdeen Business School, so Aberdeen University didn’t get it, and I think our previous dean, he was very active on the international front, promoting the School. So it’s very much a branded product now. — I do think it’s getting a good brand reputation.

There has been a series of attempts to reinvent the School through marketing and branding strategies. However, branding the institution or particular academic unit is not peculiar only to this School. For example, as Shattock (2003: 121-136) claims, marketing technique is essential to successful university management in this competitive
market. The following comment made by the senior lecturer shows their market-oriented approach:

"We only operate courses that are viable and courses that aren’t viable have to go and make room for the others so any innovation will be supported but it’s always done on the basis of the best market research."

Under the circumstances where free market principles are encouraged, building up an entrepreneurial culture within the university is one of the tactical ways to thrive. However, this process also begins to change the nature of university life. It is courses that sell and fulfil market determined criteria, rather than their intrinsic value which is significant. This diffusion of business values is evident in the language and words used: there are certain phrases such as ‘sell’, ‘launching our product’ and ‘marketing’ which are the words of commerce rather than education. The linking of ICTs with market values, therefore, may simply accelerate the processes of transformation of knowledge and curricula in the direction of more commodified forms of learning and education.

b) Grays School of Art – The Faculty of Design and Technology
The School of Art developed its own virtual learning environment system so the issue of standardizing a technological platform is particularly important in this academic area. As a first generation of their system, Studiospace was developed as a two-year project funded by the Scottish Higher Education Funding Council. The initial purposes of this project were - 1) to administer courses and to improve the use of web-based courses across the School of Art 2) to support distance courses 3) to provide students with the environment to work off campus via web-based learning or virtual learning. By the time the project was initiated, several independent projects related to online learning already existed within the faculty. In a way, Studiospace was developed to integrate already existing projects which staff had developed according to their needs and interests. Since Studiospace came to an end, the issue of merging the existing systems to promote a more
efficient, standardised administrative management, has become the central debate within RGU.

In this section, the kinds of factors which inhibited systems merging are examined. These factors point to the role and importance of pedagogical issues in decisions about technological applications. In the faculty of Design and Technology, the notion of ‘collaboration’ is central to teaching and learning and this is still applicable if teaching and learning shifts online. In particular, in the area of Art and Design, collaborative work in a virtual team is essential. For example, in the process of designing a product, students may have a product manager in a different campus or may need to collaborate with another organization or country. This means that students need to be able to work online by sharing ideas and comments. Also the use of visual multimedia objects is regarded as essential in their teaching discipline. Studiospace was developed specifically to reflect these points. Like other systems in different sectors, Studiospace reflects its own particular academic discipline and culture. Different faculties have different needs and have been independently developing their own projects to meet those needs.

Once the issue of standardising the e-learning system across the university was on the agenda, it became a political issue of which one was to be promoted, which one was to be funded, and which one was better. The debate developed into a territorial issue rather than a technical or simply educational one. A staff member closely involved in the development of Studiospace, reflects on the issue of the merger and the meeting of all the relevant staff regarding e-learning, which she attended as follows:

I think the systems were developed independently and they developed around different technological needs, different educational needs, and they were developed by different people. So if you like, their technical network was different, their educational requirements were different, and people who had ownership over them. So merging them, I don't see how you could manage
something like that unless you share the same educational needs, which we didn’t.

In this context the School of Art has been resistant to the issue of standardising systems. It has rebuilt Studiospace and developed Graysnet; an online environment suitable for on-campus learning and reflecting the pedagogical interests and values of the academics of the School. The professor who is the key developer of the system puts it:

The university has iNet. The university has Virtual Campus. And we were being told ‘well, you have to use these things that already exist’, but we said ‘well, actually they don’t do the things that we want to do’. So we had to be very careful in developing Graysnet that we didn’t try to duplicate the provision that was already there. So if you look at Graysnet, which is actually technically a managed learning environment because it connects to the central systems of the university, that is largely designed to support the administration of courses. So if you look at what that does, that provides the staff with information about the students. It allows you to create projects and relate those projects to learning outcomes in various modules. It allows you to — it is very much a kind of list-driven, database-driven thing and it works very well as an administration tool. It’s not, at the moment, particularly well set up for delivering online materials because it wasn’t really designed that way. So it’s a little bit complicated and here we have all sorts of institutional politics getting in the way of how these things develop.

The university still preserves the idea of merging the systems and one of the biggest schools, Social Science, is for this movement. Developing their own systems, not adjusting their systems to the university’s, means that they do not obtain money from the university. In this respect, the inflexibility of a top-down approach in a complex organisation like a university can be a hindrance to ICTs being used in teaching and learning. Also in some curriculum areas, finding financial resources from external organizations may be difficult. Under these circumstances, the School of Art cannot help facing a dilemma. The professor of the School of Art says:
The university is still trying to do that (merge systems). It’s a big job and my view would be that it would be quicker to throw it all away and start again but there’s possibly too much investment already been made. It’s like comparing oranges and apples. They’re not the same systems and they don’t integrate particularly well. They’d be far better off throwing it all away and starting again, which sounds drastic but actually the technology moves on. There’s a lot of new technology, which has superseded everything we’ve done. A lot of things that we took ages to make and a lot of anxiety over you can just get hardware or open source applications. You don’t need to reinvent them all. Also we would now — there’s a lot of developments in America that we could possibly tap into and use, things have been developed for much bigger systems than we have although we’ve got quite a lot of students. I think it’s time we had a complete rethink but — it’s not that easy when you’ve got a lot of what you might call legacy systems in place.

Legacies are not simply memorabilia of the past but are embodied in individuals and particular approaches and pedagogical values, therefore, they cannot be easily avoided or ignored. Also, experiences of using ICTs may lead to a more sceptical stance towards e-learning itself. From his own experience, the professor now concludes that there would not be much promise in e-learning in this area. He puts it:

I think it (e-learning) was effective up to a point, but I think we underestimated the time-consuming nature of the work. — the first generation of systems seemed to spend an awful lot of time building chat rooms and things like this, which don’t turn out to be terribly effective as learning environments. What is more difficult is designing systems which genuinely provide a proper feedback loop between the tutors and the students, provide a variety of tools that give you real information in a sort of structured way and — it’s not easy to achieve and most of the systems don’t even attempt to do that. — I think what we do is we try and create systems just to help us out for the time being. They (what they developed) were really innovative in their thinking. I think what we realised was that we all enjoyed developing it a lot and getting over a lot of problems and making it really rich and interactive and thinking it through a lot but then it came to actually delivering it, and that was another story really because that takes another set of skills in itself.
As the professor mentions, the developmental process may tend to be overemphasized rather than the actual implementation. To provide the actual teaching and learning, support of various kinds of resources from the university or from the school is essential. Rather than starting from scratch to develop tailored systems, using one of the off-shelf systems may be a better option. However, in reality, it is also difficult to do this. The professor comments:

There's an awful lot of work to get them to integrate into your existing systems and that's where the issue comes really, whether it's easier to build something that is matched to your own pedagogy and the way you want to work and so on, and to give it the kind of look and feel of your own university or whether you buy something in and it doesn't necessarily fit with the way you do things in terms of your quality structures and all the other things, and then you've got to spend a lot of time in changing it, and of course while you're doing that, you're paying a lot of money for the privilege of running somebody else's system. And a lot of universities who have the right kind of expertise would prefer to build their own because it's cheaper in the long run. They get more control over it. It's more adaptive. It's likely to be a better fit with people's requirements.

Unless the university has the intention to purchase an off-the-shelf system such as Web-CT, it can be too costly for individual academic units to buy the licence. A great deal of compromise on pedagogical aspects in e-learning may be required for the School of Art to go along with the university's plan to impose iNet. Needless to say their latest system, Graysnet, even the first generation of the system, Studiospace, was designed and developed taking account of the three kinds of needs - 1) educational needs 2) technological needs and 3) organizational needs (Ure, Malins and Cullan: 2002: 9-10) which the School had.

c) The School of Nursing and Midwifery (the SNM)
The SNM has had a strong tradition in correspondence education and it was in 1990 that a Diploma in Occupational Health Nursing for distance learning was introduced. In 1992, a BA in community Health Nursing/ BA in Nursing Studies developed and a BA
in Midwifery. The demand for the distance-learning has outpaced the existing fulltime route. As of 2004 there are only three courses online in the School - a chemotherapy course, an ophthalmology course and a mentors course - whilst the majority of their distance learning courses are still paper-based.

However, this background in distance learning in SNM is not simply transferable to e-learning. A senior lecturer explains:

"Now if you're actually registered with the Nursing and Midwifery Council, which is the UK regulatory body for nurses and midwives, then you have to do that practice in the UK. So there is no choice in that. If we're offering courses that don't involve any practice then we can also offer those outwith the UK and we do have one course, the BA in Nursing Studies, which is offered internationally, and we do have students who are in the States and in various parts of the world, who do access that course because it is a pure theory course. But there are professional restrictions on us in terms of what we develop in terms of e-learning."

Thus, the SNM has had paper-based distance learning courses for more than a decade. However, in spite of this, the School has found it difficult to transfer their courses online due to these constraints. The nature of their academic disciplines is regulated by the professional context. This professional factor is a key issue in the way ICTs have been used or, not used, at the case may be. What it implies is that professional values and aspirations about good professional practice are the significant ones when it comes to course design and how technologies are used. The 'space of place', in this context the rules and regulations for endorsing professional practice, are of crucial significance. One of key developers of e-learning courses explains how difficult it is to transfer the paper-based courses to online ones without careful consideration of the pedagogical issues involved:

"If you wanted to put a distance learning pack onto the Virtual Campus then, yes, but why would you want to do that? Because all"
students will do, when they get it, is print it out. So if you’re going to do something in terms of e-learning, then you need something that’s active for the students and something that they can actually sort of interact with. There’s little point in actually putting written material on screen. So if we wanted to actually go that way and put that material on screen, then we would have to change the design of what we’ve got to do that. — it would be a major project for us to take on ...

The pedagogical interests of the academic and the interactive possibilities presented by the technology imply a complex and time-consuming process which cannot be easily managed. Thus, developing e-learning courses is much more complicated than first appears. In particular, at the SNM, they claim to develop courses, more from an educational point of view, with less intention paid to making a profit out of distance learning. In order to obtain the central money they need, however, to adopt a strategic market research approach and prove that they have sufficient market for the planned course. In this sense, it is like drawing up a business plan. Under such conditions, the number of courses which can be developed by e-learning may be restricted because of the difficulty in evidencing enough market potential for them. It is also possible to obtain financial resources from external organizations. However, an interviewee also explains that:

We’re talking about the Health Service, which is also strapped for cash. We’re not talking about multi-million pound companies who might have money to put into things like that. I mean we have had lots of money. For instance, when the distance learning courses did first get off the ground, Esso put money into the occupational health courses. MacMillan Cancer Relief have given us money to develop cancer and palliative care materials, so we have had outside monies as well to help us develop some of the paper-based resources that we’ve had.

Chasing money in order to develop initiatives adds to the pressures previously stated. At the same time, it seems to be rather difficult for some subjects like Health and Social Care to launch their courses for a global market since many of their courses require a
certain amount of supervised practice in local organizations. Also the curriculum is
designed within a British national context. For instance, the qualification in nursing
studies requires locally supervised practice which may not be available outside the UK
context. This limits the potential market in a way which ICT may not be able to address.

Despite the strategic approach in the university to e-learning a good deal still depends
on individual enthusiasm and drive to take things forward at a School level. One of the
interviewees in charge of distance learning courses says:

What you get is lots of ad hoc initiatives. So you get a person like
me, who had a big interest in chemotherapy and was working on
another project, and it was sort of the logical conclusion to that
project to develop an e-learning course in chemotherapy. So I got
money to actually do that. I put forward the proposal to get that
money. Similarly, one of my colleagues did the same for the
mentors — well, the Head of School did the same for the mentors
course and another colleague did the same for the ophthalmology
course but there is no co-ordinated way of moving forward as an
institution.

The danger in focusing on a standardised platform for e-learning is that it may curtail ad
hoc activities because the system may not fit with diverse academic requirements and
needs.

Discussion of standardisation
These different experiences of e-learning reflect different pedagogical requirements as
perceived by academics in these areas. Attempts to standardise the system therefore lead
to diverse responses and different outcomes depending on prior experiences and needs
for e-learning. The unevenness of the impact of e-learning on academic units is also
important in that it can be used to raise the profile of some academic sectors and
seemingly marginalise others. The experience of the School of Nursing and Midwifery
compared with the Aberdeen Business School is illuminating in this respect.
As we have seen, certain Schools have more opportunities to obtain internal as well as external money for the development of e-learning courses. It is often argued that the experience of paper-based distance learning becomes the foundation of e-learning (Noble, 2002). However, this observation is not necessarily true. Both the SNM and the ABS have a tradition in paper-based distance learning in their respective areas, but while the Business School has gone onto develop full e-learning courses and found this empowering for them, the SNM has found it a tough challenge. It seems reasonable to argue that it is important to have a strategic approach at school level which meets the institutional one for an effective uptake of ICTs for teaching and learning. However, at the same time, we have bear in mind that the restrictions of professionalism also influence the feasibility of online courses. That means that the transferability of knowledge specific to their own domain has greatly influenced ways of developing e-learning and at the same time, there are knowledge areas which do not easily fit technological adaptation.

It is often the case that standardising systems is one of the options to increase management efficiency. The debate over the merger of different systems at the RGU has been differently perceived in each academic sector. For example, merging the systems will not cause any inconvenience to the Business School since iNet was originally developed to meet their educational needs. Therefore the Business School takes a pro-merger position. This is also true of other groupings, for example, there was no particular problem in rolling out the system within the same faculty and most academics in other Schools in the Faculty of Health and Social Care have found it very useful in terms of getting information to students and so forth. However, this is not necessarily applicable to all Faculties and Schools. The process of standardizing the system within RGU has highlighted tensions in some academic areas between the top-down drive for efficiency with a bottom-up concern to marry technological change with pedagogical interests in e-learning. Across the university this has meant different choices have been
taken which, in turn, have produced different outcomes in relation to e-learning activities.

Summary
RGU is a mixture of the entrepreneurial and corporate models in terms of McNay’s typology (see chapter three) – probably with the former dominant. E-learning has been a useful resource for RGU to expand its capacity and to use its local strengths outwith the confines of its geographical place. It has pursued this successfully and as a result, it has been redefining its institutional identity as a technologically progressive university at the forefront of e-learning. This process has largely been driven by a top-down approach to develop its share of the virtual market of international students. Specific academic groups within the university have been able to benefit from this such as the Aberdeen Business School. However, not all of the academic units of the university have the same potential with the result that growth across academic sectors is highly uneven.

As far as the Aberdeen Business School is concerned, it shares similar goals and interests with the wider goals of the institution and it has secured resources to achieve this within and outwith the university. However, if we look at what is happening in other academic units, various problems come to the surface. The School of Nursing and Midwifery exemplifies restriction on e-learning attached to their subject areas because the framework for their courses can be determined by national regulations and policies for professional practice which limit what they able to undertake. Therefore, in spite of the fact that this school has had a strong tradition of paper-based distance learning courses, it has been struggling to launch new e-learning courses.

Also, the relationship between the VLEs for on-campus study and pedagogies linked to diverse subject areas is another important issue. The School of Arts provides an example of the difficulty in reconciling pedagogical interests in the context of implementing a top-down approach to institution-wide e-learning. In so far as the development of e-
learning remained within the school, it seemed to work well. However, once the issue of
standardisation of different existing VLEs systems was raised, the tensions between
those academic areas which do not see their needs being addressed by the university
preference for a particular technological platform came to the surface. Because of the
managerialist approach the university can standardise the system, which may be more
‘effective’, but it is important to know that the cost of this seems to be a sacrifice in
pedagogy interests in certain academic units. The top-down interest in efficiency,
therefore, clashes with the requirements of certain subject areas to have more tailored e-
learning systems - where they are seen to be relevant. It seems that if there is a virtuous
circle of dialogue and decision-making between the needs of academics and the interests
of management this may well resolve some of these tensions - but it might also be the
case that the values underpinning these tensions are simply not compatible.
Part Three

Analysis and Conclusion
Chapter Nine

Analysis of the case studies

Introduction
This chapter examines the four case studies by comparing and contrasting developments of e-learning within and between the institutions and their national contexts. The analysis occurs on three levels. First, an intra-sectoral comparison is undertaken examining the differences and similarities of the two universities in Japan. Second, this approach is copied with the focus on differences and similarities in the Scottish context. In the process of doing this, university e-learning strategies and the governance and academic autonomy are addressed for each case. Third, a cross-national comparison is undertaken by examining general patterns of influence and change between and within the two national contexts. The analysis focuses on the complex process of interaction between technological forms and social and cultural processes which are reflected in institutional practices and the activities of individuals.

Part one: intra-sectoral comparison in Japan
Japan – Comparison between the private university and the national university
In the following sub-section the differences between the two Japanese case studies are examined. The role of the state and its relationship to these institutions is highly significant particularly in the take up of certain technologies and its resource implications. This has had an impact on what type of ICT has been deployed and the uses they have been put towards. The strategies open to these universities to develop ICTs are distinctly different and have had important repercussions on how the technology is developed pedagogically. The scope for bottom-up initiatives in the national universities has been severely restrained whereas in the private university developments are potentially more open, although in the end, the degree to which they can introduce new technologies depends on resources available. The relationship
between the state university and the market is also regulated and is an important
distinction which needs to be made. These factors are explained and elaborated below
before looking at some of the similarities between the institutions.

a) Differences
One of the major differences between the national and private sectors regarding e-
learning practices concerns the relationship with the government. In the state sector,
government policy has had a strong influence on the technological infrastructure for e-
learning. The state carries much of the cost of this development. Thus, Kyoto University
has benefited from government provision of a satellite communication system (SCS),
which created an infrastructure for e-learning without substantial cost to it. Without the
technically sophisticated infrastructure of the internet which had not been installed in
state universities in the 1990s, satellite technology provided a quick fix solution to the
need for developing communication systems nationally. One of the positive outcomes of
this trend is that it facilitated the potential for exchange of courses via the satellite
network. All the national universities were supposed to actively participate in the
exchange of a wide range of courses and research activities to realise networked
universities by establishing new partnerships with other institutions.

However, contrary to the government’s expectation, the use of SCS was not actively
developed. This vision for e-learning was based on the view of a state system where
collaboration and cooperation were seen to be more important than competition. This
was set in a context in which the state during the 1990s was trying to rationalise the
university sector by a process of merger and reduction in overall capacity at a time when
student demand for places was decreasing. The use of satellite technology was aimed to
facilitate this and make the likelihood of closer cooperation more feasible. At the same
time, the use of this technology was also thought to put Japan at an advantage in relation
to competitor countries which had not developed this infrastructure. A number of
influential figures in the government at the time promoted its take up.
The aspirations for this technology were not to be realised. In relation to state universities the national system was put in place but to be effective it needed individual units in the sector to fully embrace its possibilities. This did not happen. The system developed on a piecemeal basis and relied upon individual enthusiasts to make it happen in the way intended or hoped for. The case study of Kyoto is an exception in some respects. On the one hand, it did deploy satellite technology as part of its commitment to technological engineering. On the other, SCS did not gain much credibility in its system and was gradually taken over by Internet-based video-conferencing which was a much simpler technological format to use. In addition, the satellite technology was exclusive to those who shared the system but could not be accessed by those outside it. The nodes within the network were shackled by the constraints of the infrastructure. The enthusiasts for satellite technology were those interested in its techniques – the preoccupation was with problems of image definition and so on - rather than how the technology could be developed pedagogically. The overall outcome has been that SCS has not been widespread and many national universities, in reality, have opted out of the structure. As far as Kyoto University is concerned, the initiatives of networked classes are strictly confined to their own students unless they use the system for collaborative joint-research with other institutions including those in the US. Therefore despite strong attempts by the state to encourage networks between universities, through ICTs, this sector was resistant to these attempts. The availability of ICTs may be a necessary condition for networks to develop but they are not a sufficient condition for it to happen.

Unlike the state universities, their private counterparts like Waseda University, which was outside the SCS, had to find their own way to develop e-learning. Whilst this meant they had to find means of resourcing e-learning without state support they were, however, relatively free to develop their own particular strategy and vision appropriate to their needs. For example, the emergence of the Digital Campus Consortium created an infrastructure with more expansive opportunities to develop it and create nodes across
the university sector and also within commerce and industry outside the university. This provided resources for it to develop particularly where the space for making profitable investment was seen to exist. It also enabled expertise and skills outside the university sector to become a resource for internal use within the university. The technical support services that the different partners in the consortium could provide were an added bonus. The expertise which this allowed universities to draw on created a synergy between the various strengths of the different groups, companies and interests that were part of this structure. The driving force for this was the ability to make profit. There may well be other benefits but it was not the focus of the activity. In the private sector, therefore, we can see the emergence of a corporate model.

What Castells (1996) describes as 'horizontal' development or a flat structure of management devolving decisions outwards from the centre is also witnessed at Waseda University. The pattern of development of ICTs and their links with the consortium was very uneven across the university. In some academic divisions such as the arts the links with partners outside the university was highly developed whereas in areas like science and engineering it was less so.

At Waseda University, the commitment to a vision of e-learning and a policy towards it did not undermine academic autonomy. Waseda University has been well-known for its liberated academic culture and freedom, therefore, a culture of autonomy is also valued. As a result, a big disparity of the developments within the institution has emerged - some schools like the School of Humanity and Arts have been extremely successful in the development of e-learning by taking up the Internet rapidly, and establishing new partnerships with companies. They have also deployed a more varied range of technologies such as DVD-formatted packaged on-demand lectures, as distinct from real-time lectures via SCS. That is, e-learning becomes associated with particular technology, which is seen as interpretive flexibility in reverse. In the meantime, other academic Schools and areas, which had difficulties in attracting external interest, were
struggling to develop innovative e-learning. The major difference in the pattern of
development seems to be the intersection between the horizontal and vertical levels of
management. Where specific academic divisions develop their own vision and policy for
e-learning, the greater the likelihood of them developing external links. The opposite is
also true – without such vision and policy commitment at this level the uptake of e-
learning is less likely.

In terms of the marketisation of courses via e-learning, for example, in the area of
continuing professional development the pattern of activity in the state and private sector
is different. Japanese higher education has been rather conservative in approaching the
idea of modularized e-learning courses/ programmes selling outside campus for
undergraduate courses as a whole. In the new context of lifelong learning, the exception
is courses for adult learners. However, state sector universities are much more restricted
in relation to commercialised activities by law, although this picture is changing with the
incorporation of national universities from April 2004. However, Kyoto Consortium, of
which Kyoto University is a member but not providing any courses, allows adult learners
outside campus to study via SCS at particular locations called Satellite campus, which
are usually located nearby main train stations for learners’ convenience.

The private universities in contrast to the state sector are, in general, much more flexible
in their activities in relation to marketing courses. Linking with companies to develop e-
learning for their on-campus students is encouraged. Furthermore, packaged materials
for on-demand courses are open to adult learners through the university’s lifelong
learning units. Thus, e-learning courses which have been developed for on-campus
students can be recycled for commercial purposes mediated by different university’s
divisions. In a context where there is competition for students, e-learning can be part of a
marketing strategy because it can also imply, in the minds of potential students, that
innovative and dynamic learning processes are involved. In the mind of staff, a similar
impression might be created - even if it is not true.
**b) Similarities**

The two Japanese case studies have some common characteristics which relate to the following; 1) technology-driven development, narrowly fixed with video-streaming, 2) resistance towards commercialisation and 3) unique response to globalization of higher education. The technological aspects refer to the heavy reliance on video-conferencing or the use of physical images of people which can be explained at technological, polity, pedagogical and cultural levels. Following this, the influence of globalising higher education in Japan is examined. For example, how do Japanese universities perceive globalization? Is it a threat or an opportunity? The outcomes of globalizing processes are examined in this part.

In Japan video-conferencing or video-mediated lectures has become synonymous with e-learning. The main reasons for this would be summarized into the following four factors; 1) the influence of the US distance learning practices in the 1990s, 2) government regulation which shaped the initial form of e-learning, 3) communicative mode peculiar to Japanese culture and 4) the preference of reproduction of presence and simulation/simulacra of e-learning.

1) The influence of the US distance learning scenes in the 1990s

The application of technologies to education at university level is a very new development for most Japanese universities because of the absence of previous experience such as the use of computer assisted learning, or online collaborative work - unlike in the UK. This lack of experience in learning technology can easily lead developers of e-learning to underestimate the significance of pedagogical values and the elevation of technological ones instead.

Based on interview data most key developers in Japan mentioned that they had witnessed e-learning (or online learning at that time) in the US particularly at Harvard, MIT or
Stanford University. These became a template for e-learning in the initial phase of development and most university followed video-conferencing forms of e-learning without taking into account the distinctive social, ethnic and geographical factors which had informed this trend. It is obvious that many countries have been influenced by the US’s practices to some degree, for example, the case of the Aberdeen Business School at RGU showed that they followed Harvard University’s VLEs system. This may also be considered a part of globalisation of certain technological forms in e-learning. Interestingly, the vice-principal of the UK Open University, John Daniel (1997) claims that ‘the U.S. system is peculiarly wedded to the technologies of real-time teaching and to the outmoded idea that quality in education is necessarily linked to exclusivity of access and extravagance of resource’ and ‘America has got distance education wrong’ (1997: 15). According to Daniel, the Congressional Office of Technology Assessment defines distance learning as the ‘linking of a teacher and students in several geographic locations via technology that allows for interaction’ (1997: 15). This explains why the US universities heavily rely on simultaneous video-conferencing to a set of remote classrooms. Daniel says ‘that is not how the rest of the world conceives distance education’. Possibly, that is true, except for Japan. As Daniel points out, the U.S. instructional system is driven by teaching rather than by learning, by the needs of professors rather than students (1997). Japanese teaching practices are very similar to that of the US. Traditionally, Japanese education is teacher-centred rather than learner-centred with a good deal of authority invested in the status of the teacher. The concept of ‘critical knowledge’ is of less importance because of this and while many countries are exploring constructivist approaches to student-centred learning, with a shift of emphasis from teaching to learning, this is not the case in Japan where the transmission mode of learning is still strongly favoured.

The structure of Japanese education systems shifted from the European to the American model after the Second World War by establishing state, public and private universities which increased access to the population. Interestingly this may also explain why
distance learning has never been a huge success in Japan compared with the UK or the US. From a geographical point of view, Japan is not as dispersed as the US or Australia where there is also a strong tradition in distance learning. Universities are more or less within easy reach of people. Also, in terms of the labour market obtaining a distance learning degree tends to be of less value than, for example, graduating from a prestigious university.

2) The impact of government regulations
The regulatory framework set by the government in Japan favoured learning technologies which simulated a face-to-face communicative environment. Essentially, this created an obligation for universities to develop visual means of online learning such as video streaming. Because of the government’s emphasis on the importance of similar effects brought by face-to-face interaction, the important technological forms of ICT were image-oriented as a whole. Even after the deregulation/abolishment of this requirement in 2003, its effect has nevertheless left a legacy on developing templates for e-learning.

Therefore, for many Japanese practitioners, e-learning is synonymous with a particular technological application, i.e. real-time lecturers or on-demand lectures. One of the associate professors of the National Institute of Multimedia Education in Japan comments in the interview that video-streaming was one of the cheapest and easiest options to claim to be conducting e-learning. Video-streaming is easy to do once the necessary infrastructure is set up and it has, potentially, a great visual impact on the viewers. As Dijk (1999) argues, watching a screen is not only fascinating, but also compelling. People can be ‘glued’ to a screen despite the fact that it may be a boring experience to watch. The problem with this is interactivity through learning tends to be downplayed whereas the one-way transmission process fits with some broader, teacher-centred pedagogical practices, common in Japanese education systems. That is, ICTs are not used for innovative teaching but used to promote rather conventional teaching.
practices whilst projecting the false impression of innovative teaching through e-learning. This perception of pedagogical issues and e-learning can create problems when Japanese universities are linked with overseas university via ICTs. The real value of Japanese version of e-learning becomes questionable. For example, one of the professors in the department of Applied linguistics at the University of Edinburgh, who has offered series of his lectures of introductory linguistics to the students of Waseda University, commented that he had never felt comfortable with using this medium because of the lack of interactivity whereas in Japan his lecturers have been marked as a great success in terms of 'cyber lectures'.

3) The communicative mode peculiar to Japan
Why is image oriented communication, particularly, the image of the ‘face’ of the lecturers so important to Japanese e-learning? Dijk (1999) explains that the rise of the screen as a means of communication will lead to a partial replacement of texts on paper, of separate audio and of direct physical transmission of signs in face-to-face communication. In the UK, in contrast, most interviewees described video-conferencing as ‘just talking heads’ without much educational value and this seems to be a rather common view of video-conferencing. However, it may be too dismissive to suggest faces have no depth or cannot convey meaning in themselves. In everyday life we take a number of cues in what a person is saying be 'reading the face' and not simply the words spoken. The significance of 'face' has been highlighted by social psychologists. For example, Goffman suggests:

The term face may be defined as the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact. Face is an image of self delineated in terms of approved social attributes - albeit an image that others may share, as when a person makes a good showing for his profession or religion by making a good showing for himself. (Goffman, 1972 [1967]: 5)
Whilst this seems plausible, 'face' has different connotations between the West and the East, in particular, Anglo-American society and East Asian ones. For example, Hwang (1982) argues that face of an individual has a quantitative and a positional aspect and individual's power image can be conveyed by the face which symbolises his/her social network and positions. This may be true to all societies to some extent, however, it is extremely important in the East Asian context. These studies on 'face-work' provide us with a clue to the answer why Japanese are comfortable with the form of video-conferencing for e-learning and why some Chinese academics think conveying the image of the speaker is so significant considering the lecturers still maintain their authoritative role in a teacher-oriented environment (See Chapter six for empirical evidence for this).

The social significance of the 'face' of the speakers is not only limited to video-conferencing. Most of the real-time lectures conducted by video-conferencing have been recorded and stored in archives. What is happening currently is that these are edited by adding some more functions such as search engines linked with lecture notes, etc. Recorded lectures are transformed into something more complicated by linking them with computers and other data sets. Sometimes, this may suit certain people's learning needs particularly where access may be an issue but the contents often look packed with texts, pictures or visual images and video-streaming of the lecture at the corner of the screen. This reflects some distinctive preferences in technological modes in Japanese cultural contexts. For example, according to Hoft (1996) Japan has a high-context culture (by which he means the tendency to accept communications which are 'packed'), where information is implicit, whilst countries like Germany are categorized as a low-context culture, in which information tends to be explicit. Also, Norman (1993) argues that in many western cultures, people seek control over their learning environment, while in other cultures such as Japanese, individuals try to accommodate to the external environment (McLoughlin, 1999). These preferences significantly shape how the contents or interface of e-learning courses are presented.
4) Reproduction of presence?

Does video-conferencing allow people to have a sense of real presence? Dreyfus (2001) argues that if the teacher is only recording on videotape, then there is no real sense of presence, i.e., telepresence. He claims that what is needed is risk-taking. In physical presence, the teacher and the class share a risk - the student risks being called on to demonstrate his or her knowledge of the subject of the lecture, and the teacher risks being asked a question he or she cannot answer. Dreyfus argues that this kind of sense of vulnerability is essential for effective telepresence in teaching and learning environments, otherwise, he warns that learning becomes passive and it deprives students and teachers of learning how to learn. Dreyfus suggests that the challenging case is live, interactive, video distance learning as the US and Japan have been attempting. He also argues that the context such as the mood in the room is a crucial factor to create telepresence.

Part two: Intra-sectoral comparison in Scotland

The Scottish comparison

This section looks at the differences between the two Scottish case studies. It is important to recognise that the university sector in the UK is differentiated but not along the same lines as in Japan. The public-private difference which is important in Japan does not apply because there are hardly any private universities in the UK. The biggest divide is between the 'old' academic universities and more vocationally oriented and professionally based courses of study commoner in the 'new' universities. This pattern was reinforced with legislative changes in 1992 when polytechnical institutions became eligible to acquire university status.

In the following section, I first examine what kinds of aspects of the development of e-learning have been shaped by institutional culture and then, secondly, look at similarities between the two institutions.
In the UK traditionally universities were bottom-heavy institutions where changes in institutional shape and structure result from changes in academic disciplines, in programmes and in developments in research at the departmental level (Clark, 1983; Shattock, 2002: 239). However, after the Dearing Report in 1997 and the promotion of polytechnics to university status, new governance structures began to be required to steer the institution towards its strategic direction (Shattock, 2002). This new governance was enthusiastically adopted by the new universities. As a result, two main institutional differences emerged – ‘new’ and ‘old’ universities. This ‘old’ and ‘new’ dichotomy is essentially closely linked to the issues of governance. While ‘old’ universities (except Oxbridge, which are distinctively different from other British universities) tend to remain ‘bottom heavy’, allowing academics to have high degree of autonomy, ‘new’ universities adopt a top-down, new managerialism approach. Furthermore, while ‘old’ universities prioritise a research culture, ‘new’ universities focus on more vocation-oriented subjects with great emphasis on teaching activities. The differences of governance and institutional cultures have significant influence over the ways of developing e-learning. The two chapters of Scotland depict how governance determines the approach towards e-learning and institutional cultures influence the ways in which academics develop e-learning.

The UoE has a strong research culture and a tendency to view teaching as a secondary priority for academics. It is generally acknowledged, for example, that good track records for academics in research publications and contracts are essential for career advancement – the same status would not apply to teaching. In these circumstances, where there are not extrinsic rewards for extra efforts to develop e-learning only a minority of enthusiastic academics might be expected to devote their time to this activity. As a result the developments are diverse and rather fragmented. Most of the e-learning projects are small scale because of the nature of bottom-up approaches to e-learning. This can be a limitation in terms of the subsequent impact of different projects.
but it can also be an opportunity in that it allows key developers to explore and tailor e-
learning to their own needs and those of their students.

The status of the university, where academics enjoy high degree of autonomy, can limit
institution-wide development of e-learning. In the UoE this process is changing under
the influence of the new Principal. His enthusiasm for e-learning is impacting on the
climate for change in e-learning activity – the introduction of a university e-learning
strategy and some generous internal funding for e-learning developments to promote
bottom-up approaches are examples of this. In addition, centralised decisions to
encourage staff to use Web-CT as a standard system for VLEs adds a more top-down
initiated process to the overall picture. However, it is still questionable to what extent
this shift in the approach towards e-learning development can be effective on an
institution-wide scale because of traditional academic autonomy. The pattern is complex
and therefore difficult to generalise about. In some cases, academic units like Medicine
have evolved in-house VLEs and software which illustrate a strong integration of ICTs
into teaching which are resourced by the School’s learning technology unit. In this case
the culture of the School overrides that of the university - or, in the current context,
neatly meshes with it.

RGU adopted learning technology for their teaching and learning practices both for on-
campus and ‘at-distance’ courses from the late 1990s – although there are cases of
pioneers in specific subject areas who started in the early 1990s. RGU has developed
several versions of VLE systems across the university. The pattern of development
seems to be very typical of new universities in relation to e-learning. For example, De
Montfort University (Brown, 2002) and Derby University (O’Hagan, 2003) have gone
down similar paths of developing institution-wide e-learning. RGU emphasises its
teaching side, although the balance between teaching and research has been changing in
recent years and this is generating pressure on academics to alter the amount of time they
devote to research and teaching in their existing work loads. As it is obvious, from the
case of the School of Arts and Aberdeen Business School, where their research is closely connected with e-learning initiatives and pragmatic links between research and teaching are evident. In this sense, their research outcomes can be useful for their actual teaching practices of e-learning and open up more possibilities for developing new e-learning courses. Most systems used by RGU are made in-house and there is diversity in the VLE systems. However, this diversity is shrinking towards the direction of standardisation under the vice-principal’s strong steer.

The cultural differences between the two universities reflect the kinds of knowledge both institutions pursue. The old universities such as UoE have, to some extent, been more resistant to embracing ICTs in that the emphasis on the pursuit of academic (theoretical) knowledge and excellence may or may not be aided by such technologies. Scholarship and research require more than technological tools. It is interesting that it seems to be in the more professionally oriented sector such as Medicine and Veterinary Science that some of the most significant developments in ICTs have occurred in the old university. In these areas, the ability of the technologies to simulate and represent learning opportunities for students has been profound. However, this take up is very uneven across other departments and Schools. This is encouraged by the bottom-up approach which allows a patchwork pattern to develop.

In contrast, in the new university sector the need to establish a hold in the increasingly competitive market for students has encouraged the uptake of new technologies as pedagogical tools. Due to their emphasis on professional skills and vocationally relevant knowledge and a relatively strong tradition in paper-based distance learning, RGU makes the most of its assets and institutional culture to promote e-learning across the institution. Unlike in the UoE where resources for development come from governmental funding bodies, RGU is much less dependent on the state since the university has resources to allocate to course developers and some schools/departments have close link with industries or companies. The tendency to establish such links are
particularly welcomed by the state because of its commitment to public-private sector partnerships. However, even at RGU, not all the departments or academic units have easy access to resources from companies and industries because of restrictions imposed by their subject areas. Also, e-learning has been developed under a top-down approach with a university strategy, obtaining internal budget may require academics to adjust their courses or systems to the university’s goal and this is often done at the cost of academic autonomy as seen in the case study.

In general terms, bottom-up approaches provide academics with opportunities to explore different kinds of technological forms for e-learning but, at the same time, their resourcing and scale of application may be limited. On the other hand, the top-down approach may be effective in overcoming these difficulties but, may generate other problems, for example, by imposing a standardised form of e-learning across different subject areas. Thus, both approaches have their contradictions. Generic VLEs may lead to uniform e-learning practices and this seems to require top-down management to some extent. In-house systems can bring about educational benefits to teachers and learners in very particular and tailored ways. However, these technologies may carry conflicting values and pedagogical practices which may be intangible but are inscribed in the system which is used as examples from RGU demonstrate. Mergers between different systems are, therefore, sites of conflict and may often only be resolved in the long-run through a top-down managerial approach.

b) Similarities

The two case studies show similarities in the following aspects; 1) relatively rich in the experience in learning technology for the past few decades and as a result, serious pedagogical exploration for new teaching and learning, 2) but strong preference of text-based communication 3) the response to globalising processes.

1) Pedagogy and technology
The impact of ICTs in both universities has raised questions of pedagogy and raised the status of these concerns in important ways. The elite research university, UofE has had to address issues of teaching and learning in this new context. The status and priority attached to research meant that it was the main factor in generating new knowledge and, ultimately, knowledgeable students. How this process occurred was a secondary consideration. RGU has had to address issues of pedagogy more overtly because it does not have the same potential to attract research. Therefore creating knowledgeable students has been seen to be more a product of good teaching than simply good research. In spite of the different approaches to teaching, there is a similarity between the universities in that most e-learning developers take pedagogical issues into serious consideration compared with their counterparts in Japan.

The UK has relatively rich experiences in the areas of CAL (computer-assisted learning) and multimedia education in the 1980s and 1990s. Some state-lead programmes on the application of new technologies, mainly computers, show how much foresight the government had in this area. For example, Boyd-Barrett (1991) mentions that at a school level, the Microelectronics Education Programme was run from 1981 to 1986 and following this, policy goals and a move towards curriculum compulsion was attempted in the late 1980s. Also, a grassroots movement of pressure groups such as Microcomputer Users in Education in the late 1970s had significant influence on government thinking. Involvement of the government seemed at first to be an economic solution in search of an educational problem. Furthermore, a government advisory body, the Council for Education Technology was established in 1978 so that they could promote projects related to learning technologies at all levels of education. Between 1980 and 1986, £23 million was invested in the study of microelectronics (Boyd-Barrett, 1991).

Obviously, the study did not remain in the area of the exploration of educational technologies, but it led to further pursue new pedagogy for new forms of education. In
the UK, more text-based communication has been preferred among various forms of e-learning. This proves that most educators using e-learning are focusing on learning processes rather than teaching, in other words, student-centred learning rather than teacher-centred one. The history of this pedagogical shift dates back to the 1950s, when the traditional teacher-centred paradigm began to be called into question first in the US and then the UK.

Thorpe (2002) also claims that the growth of independence in learning had been recognised, at least by some practitioners, in the 1970s. For example, Laurillard (1991) argues that ‘education as communication’ is an important and valuable model and she refutes didactic mode of CAL using some case studies of tutorials because it does not allow the student control over learning strategy. Instead, the pure communication model gives more responsibility to the student and allows them to control all of these aspects of the learning situation. Later, Laurillard (1993) elaborated the core ideas in her influential book, Rethinking University Teaching. Laurillard’s conversational theory of learning shows the interaction between learner and teacher operating at two levels – through dialogues where learners’ conceptualisations may be corrected and refined by a tutor, and through practical tasks set by the teacher, where learners’ actions prompt intrinsic feedback on their understandings.

While pedagogical aspects developed around the conversation theory of learning – the importance of dialogue between students and tutors or teachers, the application of computer-conferencing was widely attempted. For example, Mason (1991) mentions that various studies of the use of computer conferencing were already done in the 1970s and 1980s in the US and the UK, for example, studies of single experiments (Phillips et al., 1988; Gray 1989) or long-term, wide-ranging analyses (Vallee et al., 1974, 1975, 1982, 1984). In particular, Mason (1991: 319) comments that the educational applications of computer conferencing can be subdivided initially into uses at ‘place-based’ institutions (schools and campuses) and distance education institutions (distance programmes at
campus-based universities, and dedicated distance learning establishment such as the OU).

Thus, technological developments and the educational application of new technologies were conducted parallel to the development of pedagogy for education using new technologies in the UK. Milligan (2000) also suggests that these past experiences explain why topics such as course design and technology selection, learner support, accessibility of materials and access to other learners are conceived as high priority issues for designers of virtual learning environment.

2) Text-based communication

Dialogue is a key concept in e-learning in the UK. Text-based communication such as e-mail, bulletin boards, ‘real-time’ chat, asynchronous chat, group discussion and debate, is all actively adopted in e-learning and this explains why VLEs is popular in the UK to some extent. However, does this mean that there is a lack of interests in telepresence via video-conferencing, unlike Japanese institutions? In spite of the early adaptation of computer-conferencing such as FirstClass, not many universities provide e-learning via video-conferencing unless there is a geographical problem (cf. Highland and the Islands initiative in Scotland).

Higham (2001: 163) claims that ‘purely text-based communication will be limited to those environments where it is either technologically feasible or where continued anonymity is essential to the activities of the online community’, but this does not seem to be true to the reality in the context of e-learning at British/Scottish universities. For example, video-conferencing and the necessary equipment for it are installed at universities within Scotland but its use is minimal for teaching and learning. It is clear from the field study of Scottish universities that most academics who were interviewed for the study do not have particular interests in using video-conferencing except the department of Meteorology at the UoE. Some academics were more dismissive of video-
conferencing in their comments (see the comments from a senior lecturer of ABS in chapter eight, for example) and some show kind of uncomfortableness in providing lectures as cyber-lecture (see the comments from the emeritus professor who provided cyber-lectures to Waseda University in chapter six). Some other studies also show that there are similar disinterest and negative comments on teaching and learning via video-conferencing.

Part three: General discussion

Introduction

In the preceding sections, we have seen the comparison within the two countries respectively to make a contrast of institutional cultural differences as well as similarities. The following sections focus on general issues, which are relevant to understanding the pattern of developments in the specific context of the case studies. As Wild (1999) argues, cultural factors are very important in the diffusion of ICTs and e-learning. Henderson (1996) also claims that learning technology is a carrier of culture, however intangible. In this section, based on the examination of national culture influences over the ways of developing e-learning, the analysis is extended to more general discussion.

The influence of national culture

Through the four case studies, we have seen the diversity of developments of e-learning in different countries. How can we interpret this diversity? Collis (1999) argues that the behaviour of individuals and collectively of institutions is affected by the values and

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38 The Open University conducted a research on telepresence using Webcast - the KMi Stadium (Scott and Marc Eisenstadt 2000 [1998]). As one of their big projects on telepresence, there is the Virtual Summer School in 1994 for Open University undergraduate course D309 Cognitive Psychology. The Virtual Summer School enabled students to attend an experimental version of summer school from their own homes using FirstClass and CU-SeeME from Cornell and the Virtual Meeting from RTZ in Cupertino (Eisenstadt et al., 1996). This approach emphasized ways to augment the real experience, in the spirit of Buxton's (1997) 'augmented reality', rather than embed the user in a potentially daunting virtual reality environment. Scott and Eisenstadt conclude with rather negative findings. They argue that the 'virtual classroom' can be a very unrewarding experience for two reasons: (a) the technology can easily get in the way; (b) even if the technology works brilliantly, the real classroom experience itself is usually pretty depressing (Scott and Esenstadt, 2000: 172).
attitudes that they hold and the societal norms that surround them. The values and attitudes are identified as either national culture or institutional ones in this study. National culture is closely interrelated to education which has a major responsibility for transmitting to subsequent generations cherished values and meanings. For example, Daniel (1996: 128) argues that ‘the governance structures of universities vary considerably, reflecting national cultures’. We must, therefore, consider management approaches and values as well as the interrelation of culture and learning (McLoughlin: 1999) in understanding the development of ICTs in education.

In particular, different technological choices can be explained by taking account of national cultures. The clear difference in the choice of technological modes - visual oriented media in Japan and text-based communication in the Scottish context– can be attributed to national cultures. Here, cultural peculiarity to each country related to teaching and learning practices should be taken account. For example, Chen, Mashhadi, Ang and Harkrider (1999) refer to the philosophical cultural difference between the East and the West, acknowledging the risk of generalization – ‘a general tendency of Western culture to value individualism, personal, achievement, independence, human interactions that are functionally based and specialized, inalienable rights, and an emphasis on time and space systems’, whereas, ‘the people with non-Western cultural orientations are portrayed as emphasizing group cooperation, affective expression, harmony with others and nature, holistic thinking, intuition, and contemplation’ (1999: 220). Whilst this may be an overstatement and misleading in many respects it does contain some truth. The type of technologies used in the Japanese context, for instance, appears to try and reproduce collective modes of learning whereas in the Scottish context the student-centred approach reinforces a more individualistic notion of teaching and learning.

One of the obvious differences between the two contexts is language. But it would be a mistake to think of language merely as a technical matter - it is an integral aspect of culture (Smith, 1991). For instance, Japanese language tends to avoid directness and
communication can be deliberately ambiguous. As most Japanese interviewees commented, the face of the speaker on screen is important, because it gives viewers a feeling of reassurance. The ambiguity of language in Japanese culture means that visual imagery is also an important element in deciphering the meanings intended in the communication. This kind of intangible factor may also contribute to the preference of video-streaming amongst Japanese academics. In contrast, these visual social cues are less important in the western world and therefore, text-based communication is less problematic in the UK.

Another important cultural distinction relates to authority and formality in the educational context. In the UK the movement to student-centred learning permits more flexibility, dialogue and interaction between lecturers and students. Some of the boundaries of authority in relation to knowledge and learning are changed in this situation: more open questioning and decisions about what is learnt and when are legitimate elements of student centred teaching practices. This is less the case in Japan. Formality is still considered important and the authority of academics to identify and organise the learning process is not an issue. These differences in cultural patterns have implications for pedagogy and ICTs. Technological forms of e-learning are deeply embedded in a cultural context of beliefs, expectations, and values.

The influence of institutional culture
Newman, Griffin and Cole (1989) describe technology as a ‘cultural amplifier’. Technology can amplify the national culture as well as local, institutional culture in the process of developing e-learning. In the previous section, the significance of national culture has been seen, but local culture can be even more crucial. As Woolgar (2002) suggests the uptake and use of new technologies depends crucially on local social context.
What is meant by ‘local’ can vary in scope. It may mean a culture shared by the same academic units or the institution or certain group of people with similar interests and values which are then projected onto the technologies for e-learning. Some studies have described technology-based learning as a way of participating in ‘a community of practice’ (Lave and Wenger, 1991) and ‘a community of learners’ (Brown and Campione, 1994). In the circumstances in which each academic unit is a particular community, learning also becomes a social and cultural process. The process of establishing common interests and values establishes what is regarded as a priority and, subsequently, influences the way particular technologies get used (Wild and Henderson, 1997).

Aitkin (1998) also suggests that trying to impose new directions without taking into account the institutional ideologies, myths and icons is to invite early failure. Drawing upon James (1996) study, Latchem and Hanna (2002) argue that some of these ideologies derive from self-interest, prejudice or stereotypes, particularly when people are anxious about change, and it is important to face up to those that no longer serve institutional visions. In order to pursue institutional visions, developing and reviewing a university strategy is essential. In other words, developing institution-wide e-learning initiatives can be an important opportunity to redefine their own institutional identities, which is often deeply embedded into the local context.

Many theories (Giddens, 1991; Harvey, 1990; Castells, 1996) claim that ICTs allow organisations/ institutions to ‘dislocate’ from the local physical proximity and ‘emancipate’ the constraints of place. However, some recent research challenges this. For example, Agar, Green and Havey (2002: 267) argue in their ethnographic case study of the transition from cotton to computers in Manchester ‘what happened in practice in this case was a process of relocation’. The technologies have been used to shore up the idea and presence of ‘Manchester’ as part of a deliberate policy to promote a particular image of the city, rather than removing the relevance of place. Some of the case studies
in this study also seem to show the similar tendency. For example, RGU’s e-learning courses for distance learners rather strongly reflect the characteristics which come from its geographic features – Aberdeen. Agar, Green and Havey (2002) emphasise that technologies are not separate from the spatial conditions in which they exist either, something that is particularly significant in the case of ICTs, which are supposed somehow to erase the relevance of space as place. Globalisation is everywhere. However, looking at the underlying processes for globalisation, the response to the globalisation is the local negotiation and reemphasis on their physical place.

Therefore, changes that do occur along with the introduction of ICTs should not be understood based on the rhetoric of ICTs which has spatially disembedding power, but from the points of the historical spatial development and social process of location. Technology-involved initiatives – whether learning technologies or not - are always embedded in historical representations and cultural and social practices under certain political conditions.

**Technology and organisational transformation – the significance of strategies**

ICTs may have some kind of transformative ability as in the cases of Waseda University (e.g. developing entrepreneurial activities in the Pacific Rim) and RGU (e.g. focussing on the global market). However, it is important to remember that ICTs are not autonomous and determinant in the process of institutional change. For example, the case study of Kyoto University shows that the vision of a nationally networked system was not particularly well-used by academics at Kyoto University. This quasi-failure at the implementation stage highlights the significant of the agency of academics as users of the system. Passive resistance was significant enough to hinder the creation of networked universities.

The case of UoE shows some resemblance to Kyoto University. The fragmented and limited range of e-learning activities reflects the research culture of the institution with
few incentives for academics to spend their time on this activity. The relatively high degree of autonomy for academics has meant their identity is more likely to be with their subject area, professional field or department. In this context, university-wide initiatives - now given more prominence - are unlikely to make much headway unless other incentives make an impact on the status of e-learning within the university.

Looking at Waseda University and RGU, which are more entrepreneurial and corporate and guided by university e-learning strategies with clear goals, they appear to be very successful in promoting institution-wide e-learning initiatives nationally as well as globally. For example, Gibbons et. al., states of Polytechnics and corporate higher education institutions that:

First, they offer more effective managerial models; in them, unlike the old universities, strategic planning is not inhibited by collegial government, nor tough choices obfuscated by the need to secure consensus. Second, they promise greater flexibility of response to fast-changing intellectual and professional needs; they seem to belong to a forward-looking enterprise culture sceptical of the traditional demarcations, taxonomies, hierarchies that clutter the old academic culture. (Gibbons et. al. 1994: 82)

Thus, universities like RGU and Waseda may have advantages in responding to the market swiftly. In particular, if this is supported by the institutional top-down approach so that all the academic units meet the university’s goal in terms of e-learning, it may be the most efficient. However, this idea fails to grasp the complexity and uniqueness of the university as an organisation. The case of Waseda University shows us the emerging fragmentation and uneven development in spite of their university top-down vision. The case of RGU also provides us the fact that there was disparity in the ways of developing e-learning courses for distance learning programmes and problems associated with managerial concerns for efficiency in contrast to academic units interest in e-learning relevant to their pedagogical interests. Both cases show that the top-down approach is not panacea for institution-wide development of e-learning.
Overall, top-down approaches to the development of university-wide e-learning may be a necessary part of the process but it is not by itself a sufficient condition. No matter what governance structure the university takes, they need to address the micro-politics of change linked to issues of academic identity and pedagogical beliefs and values. This is particularly important since universities are ‘loosely coupled systems’ (Weick, 1976) which means that linked events are responsive and at the same time parts of the coupled systems always preserve aspects of their own identity and some evidence of its physical or logical separateness. Without ‘enrolling’ academics into a particular way of relating to technological innovation, as actor-network theorists might say, change is unlikely to occur.

The impact of globalisation
Globalisation is also often seen as an external determinant for the transformation of the university (See chapter three). However, as far as the evidence the four case studies show is concerned, globalisation forces are not determinant for the institutions’ direction nor the forms of e-learning. For example, the ways of developing and implementing e-learning in Japan - the state-led SCS project for the state sector in contrast to video-on demand lectures via the DVD and the Internet in the private sector – are unique. These forms of e-learning were designed, basically targeting the domestic market. There are some e-learning exchanges with overseas universities but most of them are more project-oriented and few universities deliver e-learning programmes overseas unlike many western universities. The development of Japanese higher education, itself, is unique and is relatively secluded from western universities, which are keen to operate on a global scale. Traditionally, there is a long industrial and regulatory history in protecting home producers even in more international, liberalising times in Japan, while the UK and the US has a stronger tradition of encouraging wider competition in these sectors (King, 2003).
In the sphere of higher education, the Japanese market is relatively closed to overseas institutions. For example, in the early 1990s, mainly U.S. universities attempted to establish university branches in the country to extend their market in Japan. They expected to obtain sufficient student numbers because the competition to enter universities was still high because of the 'baby-boomer' period. However, most of the universities have retreated from Japan within a few years except a handful of institutions. Ohmori (2004) attributes this failure to the ‘lack of recognition as an official higher education institution under Japanese law’ and the failure to receive ‘a sufficient number of applications, especially from academically able students capable of following academic subjects in English’. He explains that the ‘Japanese higher education market is highly stratified in terms of institutional prestige, closely linked to students’ academic ability’ (2004: 15). Although most people study English at school education, Japanese is the predominant language and the people who make up the potential market for western universities is still very limited.

Certainly, the Japanese language has been a barrier for western universities. Language is not simply a technical matter, however. For instance, Mayor and Swann (2002: 127) argue that language itself ‘encodes certain values that may be unfamiliar or even unacceptable to students from certain linguistic and cultural contexts’ and ‘a set of communicative and pedagogical practices may not be universally shared in a distributed learning community’. Different teaching practices, expectations, administrative regulatory differences are all barrier to open up the market in Japan. Within the limited scope of research projects, or the exchanging real-time lectures/ seminars with overseas universities, some successful developments occur. However, globally distributing their courses as a part of programme/ modularized courses would be far more difficult to realise. The contents of the courses are rooted in the national context. Transferring the contents overseas could be limited unless the very specific nature of the subject matter such as Japanese business management and the language are sought for. Therefore, most Japanese universities target the domestic market for students. Or in the more radical
case of the private Waseda University, they have a global vision, but this is narrowly targeted within the Asian domain. This rather inward-looking marketisation of university via e-learning allowed the universities and the state to focus on developing systems or courses only for domestic use and this has reinforced the distinctive pattern of e-learning development in Japan.

Thus, the Japanese higher education system has been rather independent of direct influences from western higher education systems. This has advantages and disadvantages – while Japan has been protecting students from low quality higher education from overseas, or commercial exploitation, the state regulation limits the possibilities of exporting Japanese higher education in the global higher education market where Japanese universities are virtually non-existent (Ohmori, 2004). However, once the globalisation of higher education became a policy agenda and the commodification of higher education was politically admitted at a transnational level, the World Trade Organization (WTO) and the General Agreement on Trade in Services (GATS) negotiation, the Japanese government finally started to look for a way of deregulation in the exporting and importing of higher education. Ohmori (2004) argues that the WTO/GATS negotiations have revitalised the issue of American institution branches. By politically acknowledging that higher education, particularly e-learning courses/programmes are a commodity for trading, this may bring about more significant influence over Japanese higher education market than has been the case in the past.

As for the Scottish cases regarding the influence of globalisation, the pattern shows significant differences between the two institutions as well as between the two nations. Both universities have to meet challenges posed by globalisation but in very different ways which have to do with their histories and cultures. The UoE and RGU are also positioned in different ways which impact on their approach. The former is a prestigious university which has international standing and without embarking on new global market through e-learning, the university has been attracting international students for on-
campus study. The income from the overseas students’ fees is in fact, used for the *internal* developments of bottom-up e-learning projects for on-campus study after 2003. RGU has very different view of globalisation. The location of RGU is not particularly appeal to overseas students and their on-campus study attracts more local (Northern Scotland and Highlands and islands) students. Reflecting this background, for RGU, e-learning is a great opportunity to reach a wider market and react to globalisation through ICTs. However, it does not mean that the whole institution succeeds in launching global teaching and learning activities through e-learning. Whether their courses can be marketed for a global market or not is significantly dependent on the nature of the subject areas. For example, in some areas at Aberdeen Business School, which has close link with industries, they are in a more advantageous position through some cultural adaptation in the processes of designing and developing the courses for overseas market. But this is not possible for other schools as chapter eight showed.

In general, English language may be the advantage for both universities in the global marketplace. However, again, some other issues - the overall lack of academics’ interests in e-learning, the compatibility of the subjects with global adaptation and the unnecessity of reaching a wider community on a global scale - are far more important in determining whether global e-learning distance learning programme can be successfully launched or not.

**ICTs and standardisation, cultural compromise and being networked**

Two of the four case studies (RGU and Kyoto) show different kinds of standardising processes of e-learning through ICTs. The implications of this for the quality of learning are an important issue. For example, the case of the Japanese national university reflects the government’s attempt to promote SCS as a standardised form of networked classes. RGU are in the process of merging several in-house systems into one which was originally that developed for Aberdeen Business School. The issue of the ‘one size fits all’ approach which this implies is still an open question. The UoE has not fitted this
pattern. It has had a fragmented development of e-learning but is now moving towards more standardised approaches. For example, the university decided to use an off-shelf VLEs as an institution-wide system. In the meantime, the Japanese private university let each academic unit plan and do things as they wish allowing them a great deal of academic autonomy. Essentially, there is a disparity emerging across the institution, but this seems to be acknowledged as the result of ‘competitive principles’ introduced within the university. Thus, not all but quite many may be heading for standardisation of the systems to promote institution-wide e-learning.

Agre (2002) argues that the techno-economic forces are creating the following incentives for change: standardisation of teaching activities, integration of academic units and virtualisation of approaches to higher education rather than bringing massive structural changes to universities. He concludes that rather than producing deep structural change in the way universities are organised the more likely outcome is an embedding of virtual developments into more conventional structures and educational processes. The outcome is uncertain. Some would argue the opposite. For example, modularised e-learning courses outside the campus may require careful attention since e-learning, which shares many aspects of distance learning, ‘has historically been disruptive to traditional educational systems (Latchem and Hanna, 2002: 204).

What is particularly important in Agre’s argument is that there are some dangers in the standardisation of networking. He argues that it has great opportunity to maximise efficiency but that ‘standards can be a force for either uniformity or diversity, depending on how they are designed’ (2002: 158). He believes that ‘mobbing towards these kinds of hybrid environments’ is likely to artificially homogenise many potential dimensions of diversity by ‘the uniform application, within a uniform technical and administrative framework, of a simplistic metaphor such as ‘instructional delivery’” (2002: 161). He also warns of the ‘danger that teaching, like research, will be pulled in a hundred directions as technologies are developed that respond to the diverse inherent properties
of the various subject matters, and that the university will be torn to pieces as a result’ (2002: 161). This might be an over-exaggeration. Nevertheless, there is some degree of fragmentation as different academic subject areas develop at different rates of change in relation to taking up e-learning. Added to this, when these units have market potential the rate of change can be increased more rapidly. In this case different identities can quite easily develop.

Castells (1996, 2001) claims that networked organisations create flexible management systems which involve decentralising decision-making thereby replacing hierarchical structures with horizontal developments. However, Agre argues as follows:

There is no simple thing called decentralization. Decentralization requires a framework of standards, and standards require a center. Centralization can thus happen by surprise, and decisions about such esoteric matters as desktop software can erupt into controversies about control over the future development of the places of teaching and learning (2002: 163, emphasis is original).

Therefore, it is crucial to think about the design of technology as well as university governance at the same time. They cannot be separated off as if they were no mutual reinforcement and interaction between the two. If they are treated separately then the ‘university community will experience major problems of both technology and governance in getting from here to there’ (Shapiro and Varian, 1998; Agre, 2002: 164). Therefore, there is a difficult balance to achieve between the two and we can see, to different degrees, all of the institutions in this study struggling with this relationship between governance and technological design. Agre also makes another important comment on the diffusion process of new technologies for e-learning – ‘[m]any potential innovations will be impractical until a critical mass of campuses are using them’ (2002: 164). For example, the case of the Japanese national university fits this point very well. SCS had great potential to create a networked environment for virtual classrooms in the state sector. However, without the receiving end of the system, ultimately individual
academics seeing its potential, the obstacles to the system being successful were too
great. Agre also refers to the significance of malleability of ICTs, which are easily
shaped by the ideas and interest of various social groups within the institution. Thus, the
processes of development and implementation of e-learning are political and social as
well as technical. In order to minimise fragmentation or disparity of development
university strategies with top-down management may be unavoidable. It will be more
difficult, however, to avoid the inevitable disputes and conflicts that arise out of different
social and cultural practices in such complex organisations.

Summary
This chapter examined the four case studies by comparing and contrasting developments
of e-learning within and between the institutions and their national contexts. The
analysis of the intra-sectoral comparison in Japan show how ‘state’ and ‘private’
universities emphasise different purposes and priorities and have been influenced by
very diverse circumstances in relation to e-learning. The state university was
significantly influenced by the government’s vision to create networked universities via
the satellite system albeit the response of academics showed little enthusiasm. This
technology was developed without input from academics and the concept of networked
institutions envisaged in state policy indirectly threatened the identity of the university.
These factors rather than hostility to ICTs or resistance to change were indicative of the
pattern of reactions to e-learning. The surpassing of SCS by the Internet at Kyoto allows
academics to have more flexibility, easy usability, access but above all control over how
and with who networks are developed. This issue of control and choice appears, more
than anything else, to be the decisive factor in the level of enthusiasm for e-learning. As
for the private Waseda University, it makes most of its institutional culture which
encourages experimentation and collaboration where pedagogical interests and corporate
goals can be jointly achieved - in cases where they cannot the picture is more
fragmented. By launching an institution-wide consortium project, the DCC created the
opportunities to establish new partnerships between universities and private companies.
However, in some academic areas the limited scope for choice in forming partnerships will limit their scope for action in terms of developing e-learning.

In spite of the distinctive institutional differences, some similarity between the two universities was also witnessed, particularly regarding the particular preferences of e-learning technologies. Both prefer video-conferencing or video-streaming for e-learning. What is significant here is that the image of the speaker is considered important in both cases. This may be the influence of the US’s e-learning experience in the 1990s, when Japanese innovators of e-learning took many of their initial ideas and inspirations from. Also, through state regulations regarding e-learning, both sectors were controlled in relation to what forms of it were acceptable for accreditation. In spite of the radical deregulation of e-learning, the initial regulation set the developmental paths in the current context. Moreover, the particular emphasis and fascination with the image of the lecturer in e-learning in Japan seems to be deeply rooted in its cultural and pedagogical practices.

In the Scottish universities the ‘old’ and the ‘new’ universities show distinct differences in the priority attached to e-learning as well as having distinctively different managerial cultures and practices. The University of Edinburgh is more research focussed and traditionally allows academics a high degree of autonomy, which has resulted in fragmentary e-learning initiatives from the bottom-up. Whilst this has permitted tailored forms of e-learning to develop this culture has not helped the university to implement institution-wide e-learning activities. However, patterns of governance are shifting from a traditional collegiality to greater managerialism during the past few years and this may result in more institutional wide e-learning activities being developed more systematically. Nevertheless, where teaching activity is secondary to research, e-learning will remain marginal. In contrast, Robert Gordon University has adopted a more entrepreneurial and corporate culture with a top-down approach towards e-learning. Through ICTS, the university is re-inventing itself as a leading university for e-learning.
and is expanding their market share for distance learning courses while reinforcing their on-campus teaching activity by innovative learning and teaching practices. The university has been shifting towards standardising VLEs across diverse curriculum areas for efficiency. However, this creates some tension between academic areas and it illustrates that standardisation does not necessarily suit a range of pedagogical interests.

One of the major similarities between the Scottish cases is the preference for text-based communication using VLEs and both tend to be less interested in video-conferencing for teaching. Moreover, whilst Scottish universities take the concept of student-centred learning seriously (and this pedagogical view is reflected in the use of VLEs); Japan is more teacher-oriented and prioritises technological forms which aid knowledge transmission. In both cases we can see, therefore, the way technological forms are added onto and reinforce cultural and pedagogical values. Language is also a crucial issue. For Japanese universities the wider global market which interests them is in the Pacific Rim and a good deal of attention is also directed inwards to the home market of potential students. These factors do not apply to the same degree in Scottish universities, however, the response of these different institutions reflects their approach to e-learning generally. Robert Gordon has been actively recruiting international students by distance e-learning whereas the University of Edinburgh relies on its reputation nationally and internationally to recruit students - e-learning does not play a significant role in this, although in the future this may well change as institution wide strategies are more systematically used.
Chapter Ten

Conclusion

Introduction

This thesis set out to examine the following questions:

- What kinds of roles do ICTs play in the development of e-learning? Are they the determinant factor or contingent upon other factors?
- What choices in relation to e-learning are open to universities in the context of globalising capitalism?
- How do national and institutional cultures influence ways of developing e-learning within universities?
- What kinds of outcomes do different strategic contexts and strategies (for example contrasting top-down and bottom-up approaches) have for the development of e-learning?

The study focuses on the development and deployment of e-learning in universities in the emerging context of the knowledge society. It is an account of the process of change rather than its results. In order to address the above questions, a comparative case study approach was adopted. It examined the micro-processes of change in four universities to provide the inter-national and intra-sectoral comparison and highlight differences as well as similarities amongst them. The cases were selected to reflect the diversity of national and sectoral practices in university higher education. The sample included a public (Kyoto University) and a private (Waseda University) institution in Japan, and a traditional (University of Edinburgh) and ‘new’ university (Robert Gordon University) in the UK. Together they offer very different institutional and cultural contexts for studying the influences that shape the role of ICTs in higher education.

Question 1a) What kinds of roles do ICTs play in the development of e-learning?
It is obvious but nevertheless important to state that ICTs are by no means uniform so, therefore, identifying their contribution to e-learning will depend to some extent on the nature of the technology. However, much more problematical is the process of focussing on the learning part of the technological artefact. The resistance to e-learning, evident in some of the cases, was not simply the result of hostile attitudes to technology. The real issue was the uncertainty regarding the contribution ICTs could make to teaching and learning. The process of interpreting these issues differed within and between universities. It has been evident throughout the case studies that how e-learning is developed, and how it is implemented, varies between countries, institutions and individuals. That is, the different practices which are labelled e-learning are interpreted and developed because of the importance attributed to them through different cultural characteristics – national culture at a macro-level, institutional culture at a meso-level and culture factors shared by certain academic units/staff at a micro-level. However, the significance of these cultural factors are often underestimated or ignored.

For example, the Japanese adoption of video-conferencing lectures via satellite collaboration system (SCS) can be seen as a type of mimicry of the US’s e-learning that ignored the important issue of cultural or social adaptation. SCS is technologically innovative because of its multi-point interactivity via satellite packets but not pedagogically innovative in terms of teaching practices. Most academics did not find any pedagogical benefits in the technology and therefore simply ignored participating in the networked classroom activities in spite of the state’s attempt to set it up and promote it throughout the public sector of higher education. In contrast, Waseda University, which provides a variety of forms of e-learning such as on-demand courses, succeeded to explore new possibilities of e-learning and shift from video-conferencing by encouraging more bottom-up approaches and meso-level initiatives under a clear university vision. This practice was more successful because it was embedded in the cultural practices of academics and the institution. Another example is the different value attached to e-learning technologies in different national contexts. While video-streaming is the main
form of e-learning in Japan, the UK institutions prefer using virtual learning environments systems (VLEs). But again, the way of deploying VLEs is differentiated among academics units and institutions. For instance, Robert Gordon University has aggressively adopted them for on-campus study as well as distance learning, whereas the University of Edinburgh is relatively slow to uptake VLEs as a whole institution and the impact of technologies for teaching and learning is much less significant. Thus, these four case studies signify the underlying importance of socio-cultural factors that mediate which technology is deployed and how technology is used in different contexts.

Technological determinism has been theoretically criticised (see chapter two) but it is, nevertheless, still ideologically powerful in policy debates. If technologies are seen to be above the sectional interests of a particular group, their cultural habits and individual preferences then they can appear to be quite powerful tools. The dominant group seeking to introduce new technologies may use resistance to their adoption by one group to imply a rather narrow-minded outlook. This can be persuasive if the technology is seen neutrally. But this would be to understand their adoption and deployment in a very superficial way. For example, ICTs may be used to shift the balance of academics' time from teaching to research whilst presenting an image of the institution as developing innovative technologies. The truth of the matter may be different. Teaching may suffer because it cannot be assumed that ICTs simply improve the quality of educational activity. As these case studies have shown, a lot will depend on the processes involved.

The importance of the process of developing and deploying ICTs might be ignored or devalued as the trend towards the knowledge society, and the competition amongst nation states not to be left behind, reinforce the view that ICTs can be the panacea to the problems which different countries and universities face in this struggle. New technologies seem to provide simple quick-fix solutions which have some broad appeal. Apply this to universities and the case seems even more compelling. Shouldn't universities at the forefront of knowledge simply adopt e-learning universally – or perish
in the face of global competition? The answer to this, however, is not so straightforward. This brings us to the role of ICTs in the context of globalisation and claims about the network society.

**Question 1b) Are ICTs the determinants or contingent upon other factors?**

If ICTs were determining factors in the process of change in e-learning practices it could be anticipated that some degree of convergence in different sectors and national contexts would be occurring. If this were the case, instead of diversity, the pattern of development would point in the direction of uniformity. This is not occurring based on the evidence from the case studies. Within any one institution the pattern of development and deployment of ICTs can be very diverse and this can be the case even where management attempt to promote a degree of standardisation, as in the example of Robert Gordon University. Differences between organisations and nations suggest that the impact of ICTs is, at least in part, contingent on social and cultural factors.

For example, the attempt by the Japanese government to impose e-learning through SCS, which subsequently led to passive forms of resistance at Kyoto University, is indicative of the importance of cultural factors and individual choices at an institutional level in the process of change. Whilst government policy is a powerful instrument in defining problems and their solutions, this does not necessarily mean academics have little or no agency to act back in ways which reflect their problems and concerns. Also at Robert Gordon University and Waseda the importance of subject areas and appropriate pedagogies, rather than new technologies, seem to have been the important factors determining whether or not networking with the aid of ICTs is feasible and useful. The important point is not the ability of ICTs to create networks, but the ability of actors to negotiate their goals and interests and a key factor in this is their professional identity and how e-learning can help or hinder its development. In this process, therefore, institutional histories, cultures and aspirations of academic units and individuals play the main role in shaping the pattern of development and deployment of ICTs.
Culture and meaning as important resources which influence what academics do and this points towards the significance of place as a source of these. A critical comment on Castells' theory deriving from this account is that he minimises the 'space of place' in his concern to make the case for the dominance of the 'space of flows' which, he argues, characterises the informational mode of development. Place, however, is a more resilient and a powerful resource for meaning that cannot be downplayed in this way. In the Japanese and Scottish cases we have seen just how important geography, and the cultures that arise out of different places can be, in shaping the potential and purpose of ICTs. The case studies demonstrate the more critical impact of social, cultural and institutional concerns and interests, on the process of developing e-learning. Whilst the University is a unique institution, this point is of wider significance. The process of technological innovation has to be seen through the lens of the social shaping of technology. It seems more reasonable to say, based on this evidence, that 'place' and 'flows' mutually interact and that the latter can reinforce the importance of the former. Place does not simply decompose in this new context and ICTs do not transcend the significance of place.

The significance of institutional cultures and the agency of academics in the process of change have important theoretical and empirical implications. For example, in Castells' (1997) analysis the informational mode of development is seen to be the determinant factor in the process of change. What has been argued is the need to shift from highly generalised theoretical accounts to more detailed empirical analysis of case studies of change. In Castells, for example, the nodal points of expanding networks are oversimplified because actors are missing from the process. In contrast, in this study the importance of the tentative and tenuous process of 'making connections' is the focus of investigation. There is not a simple or self-evident unfolding of events shaped by the determining power of ICTs or the logic of networks. The broad theoretical claims Castells makes, ignores or marginalises activity by actors within specific contexts of
change. In Actor-Network Theory, for example, the process is complicated in that networks are developed through a process of ‘problematisation’, ‘interessment’, ‘enrolment’ and ‘mobilisation’ – all of which are problematic and unstable stages which are continually subject to interruption and change. What Castells’ theory does not explain, therefore, is the negotiation processes amongst actors/agencies at the nodal points of networks. The value of a micro-level of analysis is that it reinstates into the process of change the ability of actors to make choices and decisions – even where these are highly constrained and framed by policy and global forces. The contingency of ICTs, therefore, re-emphasises the need to develop theoretical and empirical analysis at the level where change occurs and at the point where people in specific contexts are influenced by it and, in turn, act in ways to shape and modify the processes involved.

**Question 2) What choices in relation to e-learning are open to universities in the context of globalising capitalism?**

The concept of globalisation is often treated as an autonomous force in the literature (see chapter three) in that it is claimed to limit the choices open to organisations and institutions such as universities. This argument does not fit with the evidence of this study in that a range of influences, not simply global economic forces, affect the pattern of responses to e-learning by universities and academics. This study shows that the relationship between the ‘local’ and the ‘global’ is more complex than the view that the latter systematically overpowers the former.

It is true that ICTs have become a central part of the emergence of a global higher education market and we can see how this has shaped the response of universities such as Waseda and Robert Gordon University. Whilst the latter still run distance-learning courses, it is ICTs that have enabled them to develop their global market share. In particular, the demand for ‘knowledge workers’ has had an impact on the subject areas that are being developed in this new context – the uneven development of the e-learning curriculum at Waseda is evidence of this too. It would seem to be the case, therefore,
that globalising capitalism is influential in that it is impacting on the global market of higher education and ways of educating students to make them a competent workforce in the global economy market. However, it does not unproblematically shape the university or the type of e-learning that is deployed and developed. There is a process of localising ‘globalisation’ within the institutions, the departments, the subjects and how academics seek to utilise e-learning. For example, the pattern of developments at Kyoto and the University of Edinburgh demonstrate little influence from global economic pressures. Kyoto University attempts some networked classes with their links in the USA but their teaching and learning activities are mainly targeted at their on-campus students. E-learning is not simply a means to explore and exploit a new market but a way to improve the quality of on-campus teaching and learning by removing physical or geographical restraints. The University of Edinburgh is in some respects similar to the case of Kyoto University. Their main concerns are in research. Where teaching is a secondary priority and developing e-learning courses is less officially rewarding, creating e-learning courses for a global market is not attractive at all. ‘Global’ may be important in terms of being in the top-league for research but this logic has not had an impact in the domain of teaching and learning. E-learning is not seen as a particular need at the University of Edinburgh as a market strategy. Therefore, its main areas of e-learning and development tend to be dictated by the logic of subject areas or the interests of enthusiasts and the perceived benefits it might bring to pedagogical practice.

Thus, it is clear that there is a close link between the local and the global. The local is not completely rendered powerless in the face of global capitalism and globalisation does not have any simple uniform effect uninfluenced by cultural and historical factors. Globalization is often described as the death of distance (Cairncross, 1997, 2001). Contrary to many globalisation theories, what is demonstrated in the case studies is that there are different kinds of responses to the globalizing higher education market. The particular values and expectations which are embedded in locality are reflected back as
'glocalization'. In this sense, what Woolgar (2000: 19-21) claims, 'the more global, the more local', makes sense.

In Castells' (1996) argument, economies based on informationalism have a productive advantage. However, what is meant by 'productive' is less problematical for a firm operating for profit than it is for a university with aims to further research, knowledge and understanding. It may well be necessary for capitalist firms to utilise ICTs or sink against the competition. It is less clear that this also applies to higher education. The conflict over standardisation at RGU characterised the problematical nature of managerial values clashing with academic ones. The value of ICTs seems to be much more in their ability to enhance, where appropriate, processes of teaching and learning. The word 'appropriate' is important because we can see in the case of Kyoto University how ICTs can be imposed in inappropriate ways.

In the context of the so-called 'knowledge society', however, the role of e-learning is significant and the competition for students is global. The relative position of universities and therefore their opportunities to respond to this context is not an even one. The opportunity to market the university globally, in Japan for example, is limited by the issue of language. There are other significant cultural differences too. Whilst facial imagery is considered highly important in e-learning in Japan (the Pacific Rim to a wider extent), text-based communication (possibly with some visual images) are more commonly deployed in the Scottish context. Conducting networked classes, for example, via video-conferencing between Japanese and Scottish Universities may not bring about the same level of satisfaction in terms of the quality of teaching and learning since what they expect from e-learning seem to be rather different. The different reactions from the very dissatisfied emeritus professor at the University of Edinburgh, who has conducted a series of video-lectures (see chapter six) at Waseda University, compared to their delighted response at his 'talking head' is evidence of just how varied and culturally shaped expectations are of e-learning. In the Scottish context, however, globalisation has
provided distinct opportunities and challenges which the two universities in this study have addressed in different ways. The nature of these opportunities and challenges is shaped by their institutional histories, academic prestige and educational purpose as well as sense of place. The University of Edinburgh is positioned in this respect in a very different way to Robert Gordon University – the latter has had to develop an aggressive marketing strategy in order to meet this new challenge whereas Edinburgh has not.

**Question 3a) How do national cultures influence ways of developing e-learning within universities?**

The case studies show that there are significant differences in terms of preferred technological choices between the two countries. Whilst Japan goes for video-conferencing or video-streaming, Scottish universities are keener on adopting VLEs. Most of these have a function to conduct video-conferencing, however, its use is the exception rather than the rule – for example, the one professor in meteorology at the University of Edinburgh who is enthusiastic in the use of video conferencing is an exception to the rule. However, it is the nature of his subject area, meteorology, which benefits from the sharing of information internationally, that explains his interest and commitment to this technological form of communication and teaching.

In the Scottish universities, Edinburgh uses VLEs mainly for on-campus students, whilst Robert Gordon uses them for both on-campus as well as distance learning programmes. In either case, they heavily rely on more text-based communication, possibly with some visual images to explain things but seldom with the images of the speakers. This distinctive difference in the preferred technological forms reflects the pedagogical differences between the two nations. Whilst Japan still prioritises teacher-oriented practices or information transmission in a lecture form, Scottish universities are more likely to emphasise student-centred learning practices. The contrast between the two societies does suggest, therefore, that there are distinct national cultural influences on technological preferences, forms of e-learning and their development and deployment.
Also, it is important to remind that the UK has a longest history in computer-assisted learning (CAL) and this experience has led to pedagogical exploration as learning technologies evolve and their use in teaching and learning develops. Japan, which does not have the same history or experience in CAL, tend to see technologies as a ‘technical-fix’ for certain problems such as rationalising the teaching process, or by promoting exchanging credits through networked classes within affiliated universities or as a device for connecting consortium institutions or simply to provide students with more personal attention not always available in a mass education system. However, it is still the case that pedagogical issues surface in the responses of academics to e-learning and even though it may not receive the same attention in policy and managerial contexts the concerns of those involved in teaching and learning are inevitably part of the process of understanding how change occurs and how responses are shaped.

Technological preferences are also linked to national regulation. For example, the Japanese government reinforced rather restrictive regulations on accredited e-learning courses (see chapter three), although it has deregulated these over time. The initial regulation set the trajectory of the development of e-learning and has remained as a template ever since. Also it is important to note the mimicry of technologies developed in the US, which has been common practice in Japan. The concentration on video-conferencing in Japan can at least, in part, be attributed to the US’s e-learning trends in the 1990s. This particular form of e-learning in Japan has to ‘fit’ the characteristics of ordinary communication (see chapter nine, in particular, what Goffman (1967) calls, ‘face-work’ and teacher-centred learning). Also, apart from some experimental cases, most e-learning activities tend to be targeted at the domestic market. Directed by governmental policy, linking up universities to exchange courses across the nation has been attempted by SCS. This vision of networking is ‘inward-looking’ and took little account of a broader global perspective. This may be seen as a unique tendency of the Japanese e-learning scene, but at the same time it can be interpreted as a reflection of the language and teaching and learning practices embedded in the national context.
Question 3b) How do institutional cultures influence ways of developing e-learning within universities?

It is also important to mention the influence of institutional cultures over the ways of developing e-learning within each university. For example, in Japan, the culture of the national university and that of the private one show distinctive differences in the ways of developing e-learning. Whilst the national university was given a template, SCS, it was not received enthusiastically. Moreover, there was a distinct tendency to see networking via the consortium as diluting the quality of teaching and learning. In contrast, the private university were able to develop a greater variety and more flexible forms of e-learning through establishing new partnerships with companies and other universities.

As for the Scottish cases, the ‘old’ university has relied on e-learning initiatives which are localised either to courses, departments or subject areas, whilst the ‘new’ university adopts a more strategic approach to their development. This may be partly to do with curriculum areas. For instance, the areas where ICTs seem more systematically used in Edinburgh is in vocational professions such as medicine or veterinary medicine. In Robert Gordon, e-learning is also seen as central to knowledge workers in the global economy. In each case e-learning is seen to be a useful resource for developing the type of knowledge and skills students require. The biggest difference between the two cultures at Edinburgh and Robert Gordon is probably in the priority given to research. At Edinburgh its research culture means e-learning is marginal to academics’ activities and without significant change it is likely to remain so. At Robert Gordon there is a greater focus on teaching and the use of e-learning as a resource for its development.

Question 4) What kinds of outcomes do different strategic contexts and strategies (for example contrasting top-down and bottom-up approaches) have for the development of e-learning?

Universities have complex structures of management which can permit a high degree of autonomy at various levels in the structure of the organisation and, ultimately, in the
classroom. Academic freedom has been a value which underpins the idea of universities as centres for the exploration of knowledge and any curtailment or control over this would seem to undermine the very basic organisation of university life. In this study I have characterised two distinct approaches to the deployment and development of e-learning – the ‘bottom-up’ and the ‘top-down’. They try to express the direction from which change is motivated. By ‘top down’, I have meant a lead in development that may originate outside the university (from the state) as well from people positioned in different parts of the management system. By ‘bottom up’, I have referred to those trends which have been inspired by key academics or academic units which have initiated e-learning from their own particular enthusiasm for its possibilities. In reality, of course, there are many cases where developments occur somewhere between these two poles and blurs the distinction.

Both approaches, however, seem to be significant in terms of the outcomes they produce. If the project is bottom-up, originating out of the interests of academics as key developers, the concern for pedagogic values in a specific subject area is highly likely to be at the centre of the change process. This is not to suggest that there might not be more instrumental motives. There may well be cases where the incentive is to provide courses globally and possibly for-profit. In contrast, top down initiatives can seldom take into account the pedagogical values which are important to a diverse range of subject areas and curriculum requirements. What seems to carry more weight is the standardisation of technological forms across the university (or in the case of state led initiatives, across the country, e.g. the satellite system in Japan). This may extend the process of e-learning across the institution (or nation) but it may have implications both positive and negative for the quality of educational experiences. ICTs can enable institutions to ‘rebrand’ themselves in ways that give them a niche in the market for students. In other words, the purpose of the development in e-learning may take into account a broader range of interests and concerns if the motivation for change originates from above.
The distinction between top-down and bottom-up practices highlights a range of conflicting motives such as cost-effectiveness, marketing, and so on which occupies managerial concerns. But it would be wrong to dismiss these concerns as irrelevant or simply having negative values. It may well be the case that ICTs can be very useful managerial tools to infuse their institutional goals and visions (or ideologies) over different academic divisions. Driving change from the top may be a necessary process but it is not a sufficient one for its successful implementation. For example, the case of Robert Gordon demonstrates a highly directive approach from senior management which appears to be creating an effective and prestigious role for the organisation in the development of innovative pedagogies. However, one difficulty seems to be in maintaining a balance between the wider needs of the organisation where it seeks to develop e-learning with the experience and interests of academics who know best what they require to teach. Contrary to this, the University of Edinburgh has had a bottom-up approach towards e-learning which allowed academics to be able to experiment with various kinds of e-learning based on their own needs. Whilst this has its merits, it is less achievable to create strategic change across the institution if senior management want to impose a top-down initiative.

Focussing on the top down and bottom up factors in the process of developing and deploying e-learning provides a very useful and neglected dimension to understanding the social shaping of technological change. This micro-level of analysis helps to capture the diversity in these developments and the broader characteristics or common patterns of change. From this empirical study, the characteristics of the university as an organisation is highlighted – see in particular the university as ‘loosely coupled institution’ (See chapter one and chapter nine).

Other issues to be discussed
1) Evolution of governance and e-learning
As we have seen the term, ‘loosely coupling’ can provide the picture of an institution which has various ‘separate’ elements that are momentarily attached to organisational goals and interests without simply having their identity derived from them. In a way, the linkage in a ‘loosely coupled system’ allows academics to preserve their autonomy while the university can achieve its managerial goals. The ‘loosely coupled’ nature of universities, in fact, allows the institutions to thrive in the rapidly changing period of higher education over the past two decades. Delanty (2003) claims that the university is a ‘resilient institution’ since it has been ‘through the major social transformations of modernity with regard to the institutional organization of the sciences, cultural production, the polity, and the mode of production’ (2003: 31). From this perspective, the university is a site where many of these contradictions such as universalism and particularism/ globalisation and nationalism, modernity and tradition, cosmopolitanism and national culture - are expressed. Perhaps it is the loosely coupled nature of these organisations that facilitates this. Thus, the four case studies reflect distinctive and changing ‘balances’ between top-down and bottom-up approaches to developing and deploying e-learning. The nature of this balance is therefore changing the slackness or tightness of the ‘coupling’ between academic units and the university. The picture which emerges is that if the coupling is too slack or too tight a number of issues and problems arise for the institution and for academics and departments – getting the balance right is, however, dependent on the culture and history of the institution rather than one that can be dictated by wider events, global processes or managerial dictat.

Nevertheless, wider processes are altering the context in which different universities are striking the balance between top-down and bottom-up processes of change. For instance, it is useful to revisit McNay’s (1995) model of university governance (see chapter three) as a way of expressing the changes taking place. His model shows four types of governance.
McNay’s depiction of types of governance has been broadly useful for locating the different institutions and their pattern of governance in this study. However, since McNay devised this the forces on higher education have been shifting dramatically and we have seen in the context of globalisation and pressures on funding that traditional patterns of control have been moving more towards the enterprise and corporate model of governance. However, the degree to which this pressure for change is experienced varies in different institutions; Waseda in Japan and Robert Gordon in Scotland fit this pattern of change more closely than either Kyoto or Edinburgh.
In the figure above the model of McNay is revised to represent this new context for higher education. The collegial and bureaucratic patterns of governance are in much smaller quadrants because the space for their operation has been diminished – but not extinguished. The curve and direction of the arched arrow indicates the enlarged space for entrepreneurial and corporate governance practices within higher education. Moreover, it would seem that e-learning is, in some cases, reinforcing this general direction of change in that it has the potential to expand the market activity of higher education activity. In the case of Waseda University the pattern of governance is influenced by the co-existence of top-down direction and bottom-up initiatives that fit the university’s vision. Thus the pattern of governance can still create spaces for bottom-up processes of change. The impact of e-learning is therefore not simply a unidirectional one in that it can simultaneously enhance bottom-up and top-down processes of governance.

In the case of top-down governance in a market context, e-learning has a number of implications for universities which have important symbolic and material implications for the institution. In a pragmatic sense, ICTs have consequences for access, flexible learning, and sharing useful educational resources amongst other things. In an abstract and symbolic sense, e-learning can help brand the university in distinct ways. It can create an image of the university as at the forefront of innovative teaching, forward-looking, and at the ‘cutting edge’ of change globally as well as locally. These images can be used in the market place for students. In addition, ICTs can embody the aspirations and ideologies (ideograph) of universities in subtle yet important ways. For example, e-learning may be a way of imposing a certain vision of the university across the institution, achieving cost-effective management overall or competing in the global market. At the same time, e-learning can complicate the situation by enhancing the prestige of specific academic units.
Symbolism can also work within universities too in a way that enhances the ‘loose coupling’ of units and therefore their relative autonomy. The university is an amalgamation of different kinds of ‘community of practice’ (Wenger, 1998) and e-learning is one of the ways to participate in a specific academic community. Under these circumstances, the development of e-learning can become a way of sharing and building up certain academic values, culture, pedagogy and expectations. This seems to have been the case, for example, at Aberdeen Business School (Robert Gordon University), the School of Medicine (University of Edinburgh), and the School of Arts (Waseda). In their successful use of e-learning these academic units established reputations and a good deal of autonomy for themselves within the university. In this respect, these units were able to deploy e-learning in a way that established themselves as more powerful groupings because of the status which came with their particular use of ICTs.

However, as the case of Waseda University has clearly shown this ability to capitalise on ICTs only applies to those areas which can adapt and respond to the opportunities to expand within particular markets. The breadth of a university’s activities will mean not all curriculum areas can benefit from this pattern of development. The case of Robert Gordon illustrated how academic units not able to fit into the university’s vision can become marginalised and attempts to impose on them e-learning practices can result in resistance. In this process, tensions tend to emerge as the case studies showed. As Knight and Trowler (2001: 7) claim the university is an arena of struggle as most social organisations are and this conflict comes to the surface when it needs to make decisions, because the differences between staff ‘in terms of educational ideologies, personal goals and values, and ideas of self-interest give rise to highly complex micro-political situations at the local level’. These political negotiations shape how successfully the university can achieve institution-wide e-learning.

2) Reflections on the study

Problems of doing international comparative studies
My focus has been on university organisations in their cultural settings. Two countries and two institutions in each country were selected. Ideally, a larger number of cases would have allowed me to address a wider range of settings and issues. However, even doubling the number of cases would probably not have been adequate to capture the range of diversity. Increasing the numbers of cases to examine is not a simple solution and in the context of resources was not a feasible one either. It is in fact difficult to justify the claim that the two case studies are representatives of each nation and they should seen as indicative of processes underway that are also affecting similar institutions in different places. However, providing a partial picture of each country, even if they are partial, is still useful. It is true that the more the number of cases increases, the more detailed pictures we can obtain. However, larger number of cases has costs in terms of level of detail possible in the actual cases studied. Instead, fewer case studies but more detailed examinations of each were adopted as a trade-off. The cases described are basically snapshots of selected units within each institution. They are not intended to be comprehensive accounts of all e-learning activities in each one. However, they are snapshots of some of the main trends underway and they provide a lens for looking at the process of change which has been the main aim of this study. Case studies can be useful in generating in-depth insights but can be difficult to generalise from. However, I believe that the limited but detailed descriptions of each case illustrate the complexity of technological developments around e-learning emerging in other contexts too.

_E-learning and technological developments never stabilised!_

Another difficulty in dealing with e-learning is the evolving nature of technology and its adaptation. Examining four intuitions means that there was a time slot in-between collecting data in each. For example, when this study was initiated, there was no top-down approach to e-learning at the UoE. Therefore, in my initial research design, the case of the UoE was supposed to represent a university which had only a bottom-up approach in the absence of a university e-learning strategy. However, towards the end of
the empirical study, significant changes were occurring after the inauguration of a new Principal in 2003. The introduction of the university e-learning strategy, the establishment of e-learning committee groups, internal e-learning project funds, etc. - all these changes happened during a short period of time towards the end of my period of data collection. In a way, this was interesting to see such significant changes taking place but, at the same time, it has caused ambiguity in the structure of the study since it was very difficult to withdraw from the field after completing the empirical study of UoE.

The sudden introduction of top-down approach was followed by series of changes in strategies, funding and standardising VLEs. The actual influence of these changes in the university is gradual but still observable. This led to several changes in the structure of the chapter. Although knowing that all changes cannot be covered completely and subsequent changes should be ignored, it was difficult to ignore it entirely when things were happening so nearby! As a result, some modifications and amendment were added briefly but in a more open-ended way since the top-down initiative is still in its infancy at the UoE and it is too early to draw conclusions on the actual impact of the top-down management on the whole institution. Possibly, it may be worthwhile observing how each college, department and academics will respond to these managerial changes towards e-learning over the next few years.

*Different kinds of access, different kinds of findings?*
If the access to different institution or groups of people (more from senior management people or even principals, for example) was obtained, the study might have yielded different kinds of findings. This might have helped the study highlight different issues, for example, the problem of successfully introducing technology-related initiatives at institutions. However, considering the limitation of the work which only one researcher can conduct within a limited time-period, keeping the number of the interviewees relatively low is not a total disadvantage. For example, by working at smaller number of cases, I believe that the researcher can allow more respondents per case in order to enable a more detailed and robust understanding of what is happening at a very local
level. Possibly if time and access allowed, interviewing the senior management people and particularly, the principals of each institution might have been able to produce interestingly different accounts of managerialism. However, again, because of the limitation of the study, the interviews with a wider range of people were not pursued. I believe that focusing on key developers and people of central services at each institution enabled the sample to be standardized to a certain degree and this allows me to work on the comparative analysis more effectively.

4) Future research

This study examined ways of deploying new technologies for e-learning in universities. However, it might be of useful to trace back the history of state-led Japanese mimicry tradition of technology transfer in management in detail to answer the question – under which conditions can state-university relationships work to mutual benefit both? This may be of help to understand the successful relationship between the state-university link and the development/ implementation of technology at university for e-learning, as well as highlight and clarify the peculiarities of managing change in the university institution.

The study of technology transfer in management in Japan will essentially bring me to the further study of understanding the relationship between Japanese modernisation, technology and people's attitudes towards technologies (in a more generic sense). While western society has experienced the debate of conflicts between technology, exploitation and human right during the industrial modernising period, Japan skipped the process of this kind of debate because of its rather artificial way of introducing modernisation. Partly because of this, Japanese attitude towards technologies are much less sceptical compared with that of Britain or the western world. This historical study may be a crucial foundation for any technology-related study of Japan in the future.

Japan is in some respects unique in that it can adopt and innovate on technologies to a high standard but, at the same time, various cultural factors inhibit the potential
technological development and can set a trajectory path of technology in a single-minded way largely set by the state. The state’s protectionism is also witnessed in higher education. As this study referred to (see Chapter nine), the impact of transnational political organisations (WHO/GAT) on Japanese government is becoming more obvious since it is now in the process of deregulating its higher education market. It will be interesting to see how universities in Japan and people respond to the potential influx of e-universities from overseas. Are they becoming another threat to Japanese universities or will they not have any significance at all? While exporting e-learning courses to Japan is less trouble for overseas institutions in legal and political terms, will e-learning activities in Japan become more global, i.e., will Japanese universities export their courses? In this case, national cultural factors may become more important to examine.

Summary

A good deal of research on e-learning has been produced. Most of it, however, has been informed by primarily technological or pedagogical interests and concerns. The study provides the evidence that ICTs are not the determinate force for widespread change but are embedded onto the existing university systems (Cornford and Pollock, 2002). The distinctive contribution of this study is that it focuses on the process of developing and implementing technological developments informed by the theoretical approach of the social shaping of technology. It focuses on the complexity of the process of change, taking into account institutional contexts, pedagogical issues, regulatory restrictions at different levels and technology availability. This study also brings together a comparative dimension to understand how national cultural factors can influence the shaping of e-learning at universities. Cultural factors are inscribed onto the artefacts of e-learning in either a conscious or unconscious way.

The case studies illustrate how diverse the concept of e-learning can be even within the same institutions, needless to say, in different countries over a specific period of time there are likely to be a diverse range of e-learning activities. The forms of e-learning are
constantly evolving, reflecting institutional politics, technological sophistication, policy changes, developers' needs and pedagogical values.

Higher education is a key institution in the emerging context of the knowledge society. After all, universities are essentially knowledge producing as well as institutions for education. They appear to be ambivalent in that they tend to be very traditional and conservative organisations, on the one hand, and they can be renowned for innovation and the production of new knowledge on the other. The value of academic autonomy, for example, has traditionally been a cherished one in university life and e-learning may threaten or enhance this identity. New technologies may, therefore, have mixed implications for higher education. On the one hand, they present opportunities for universities to achieve their main goals and, on the other hand, they are potentially disruptive of the way these institutions operate and the values that inform their work. This may seem even more so, if universities seek to centralise and develop the use of ICTs in more directive, top-down, ways. In addition, in Manuel Castells' classic study of the information society, it is the emergence of networked institutions which he claims are essential for survival and growth in this new context which universities have to operate within. Networks emphasise horizontal links, flatter and more open management structures and opportunities for rapid change and innovation. However, higher education institutions are much more complex organisations than private enterprises.

The findings support the view that institutional histories, cultures and aspirations of academic units and individuals also play a role in shaping the pattern of development and deployment of ICTs. Though the broader context of globalisation is having a distinctive influence on the scope for choice universities are able to make, it has not made such choices irrelevant or impossible. Cultural values and pedagogic interests in particular cannot be ignored in the process of developing and deploying ICTs since they have a significant impact. Also national cultural characteristics determine what kind of approaches towards e-learning institutions develop. The thesis claims that seemingly
uniform conditions are, in fact, leading towards sharply contrasting outcomes. In this process ICTs play a distinctive role by facilitating the efforts of universities to operate nationally as well as globally. However, it is more important to note that their actual deployments are shaped by the agency of academics within the micro-processes of change particular to the context in which they work.
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