Academic Work in the Information Age: a speculative essay

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ABSTRACT Both campus-based universities and distance teaching universities are highly bureaucratised organisations that have eroded the traditional autonomy of the academic and created environments in which education is dehumanised. Developments in telecommunications and computer-based communications open up the possibility of creating new forms of interactive universities that can operate globally, irrespective of the place of abode of either students or staff. Exploiting these possibilities to advantage will require the development of new social relations, and in particular of different cash relationships between academics, students, and validating or licensing authorities that will, in many ways, mirror the artisanal organisation of the twelfth-century university. Such interactive universities will, however, be well suited to meet the lifelong learning needs of mobile knowledge workers.

Introduction
The development of the Internet is affecting work, organisational structures and how individuals relate to each other. It is also impacting on education - particularly that branch of education variously described as ‘distance education’, ‘open learning’, and ‘flexible learning’. This speculative essay explores how these developments might affect universities and other forms of higher education by enabling academics and students to exploit the characteristics of the new communications technologies.

Distance education provides a useful arena in which to consider the impact of technology on work – in this case the work of academics. Correspondence education, first developed in the 1840s and exemplified by such commercial correspondence schools as Hermods-NKI (Sweden), the Calvert School (USA), and Foulks Lynch and Wolsey
Hall (United Kingdom), is essentially a print-based, first-generation variant of distance education (Mackenzie & Christensen, 1971). From the 1930s and 1940s other technologies began to be used: radio, television, gramophone records, audio tapes, audio- and video-cassettes, CD-ROMs and various forms of computer-assisted instructional technologies in their turn. The use of broadcasting technologies enabled new kinds of schools to be developed in the late 1950s and 1960s. Instructional (or Educational) Radio and Television systems (sometimes called Remote Classrooms) were set up, particularly in Third World countries in response to the triple challenge of demographic growth, decolonisation and development. Examples included the Telesecundaria in Mexico and the Ivory Coast Educational Television system (c.f. Jamison et al, 1978). By the 1970s second-generation, multimedia distance education systems were emerging. These used a mix of correspondence and schools broadcasting methods, with other appropriate media, including, often, some face-to-face tuition. The United Kingdom (UK) Open University was a prime example of this kind of development. All the technologies mentioned up to now were effectively ways of delivering content to the student. Often influenced by instructional design principles that incorporated behaviourism and programmed learning, they were open to the charge that they encouraged passivity on the part of the learner (Harris, 1987, pp. 139-142). Interaction between teacher and student was initially provided by written correspondence (sometimes painfully slowly), and by what Holmberg (1995, pp. 47-50) called ‘guided didactic conversation’ – an attempt to set up a dialogue in print between the author and the student, using self-assessment questions embedded in the text to promote reflection on the content. However, teaching was in the main done through specially designed (some would say over-designed) packages which effectively provided the student with a home multimedia library. Pressed for time, and with limited access to libraries, many students often never studied anything beyond the confines of the package – reinforcing the view that this was instruction, not education (Escotet, 1980, pp. 15-17). A few systems (for example, in Australia) used the telephone and two-way radio to establish real-time interactive dialogue between the teacher and the pupil, but this was never widespread. Others, such as the UK Open University, set up local tuition and counselling services to
provide a source of human contact in what can otherwise be the loneliness of the long-distance learner. Recently however, audio, video and computer conferencing and electronic mail have been brought into use. These developments have enabled teachers and learners to interact both synchronously and asynchronously at a distance, thus building in opportunities for real dialogue even for the most remote student. Finally, the development of the World Wide Web (WWW) and the ability to access information through Universal Resource Locators (URLs) provide opportunities for students to search for information and data which they can then use to develop their own insights. Distance educators see the WWW and interactive communications technologies as marking the development of the latest, third-generation ‘tele-learning’ distance education systems that, far from spoon-feeding students on pre-designed packages, enable a constructivist approach to learning by the learners (Collis, 1996). Technology, then, is seen as differentiating three generations of distance education (Nipper, 1989): first-generation distance education or correspondence education, based on the printed and written word; second-generation distance education, equated with multimedia distance education with its use of in-the-main one-way technologies to deliver material in print, audio and video form to the student; and systems using interactive communications media such as electronic mail and computer conferencing that constitute third-generation distance education. These generational shifts in distance education have been equated with particular modes of production: first- and second-generation distance education has been characterised as an industrialised mode of production while third-generation systems are seen as opening up the possibility of developing flexible post-Fordist modes of production. The strength with which this link is asserted suggests an element of technological determinism in the views of distance educators. While technology clearly is a factor in the organisation of work in technology-based educational systems, the organisation and control of work are also determined by social factors and by conceptions about the impact of size and the need for economies of scale on organisational structures. This is true both in respect of the history of distance education and with regard to its future. The organisational forms that we have could be different if people wanted them to be. One way of
approaching these issues is to situate the debate within the discourse of industrial sociology, and in particular the issues around the industrialisation of education.

The Industrialisation of Teaching

Traditionally, the work of academics has involved teaching, research and administration. It is clear that their work has changed markedly in response to a number of factors: the shift from an elite to a mass higher education system; the growth of team teaching, requiring coordination and joint decision-making rather than individual academic autonomy; increased emphasis on the need to be responsive to the market; increased entrepreneurialism, including the exploitation of intellectual property rights and patents and the rise of academic-related business; the increased intervention of the State with its concern for value for money, efficiency, and quality; the increased complexity of administration, resulting in the rise of a professional managerial class in higher education; and increasingly successful attempts to split teaching and research.

Until quite recently the academic labour market was essentially that of a craft industry in which the worker (academic) directly controlled the process of work (Rumble, 1981, p. 181; Peters, 1983, p. 96). But traditional forms of higher education have changed, as Halsey (1995) reminds us. The craft-based approach exemplified by the Oxbridge tutorial system in which ‘one of the tutors was responsible for examining the needs of individual students, suggesting the tutorials and seminars which they should attend and advising on reading lists and the whole pattern of study towards a degree’ (Sewart, 1992, p. 230) could not survive the massification of higher education. Marginson (1995, p. 34) comments on the loss of individual autonomy of academics working in traditional institutions. Miller (1995, p. 57) sees ‘degrees of deskillling, degradation through loss of status and some loss of control [over the labour process]’, so that, for example, higher education in the UK has been subject to ‘similar processes happening to the academic labour process as Braverman (1974) asserts has been happening to skilled craft labour in his analysis of capitalism in the twentieth century’ (Miller, 1991, p. 133). Shumar (1995, p. 84) believes that ‘the university increasingly follows a factory model where scholars are labourers in the sweatshop of thought’. Miller (1995, pp. 50, 53-54), Buchbinder & Rajagopal (1995, pp. 61, 70) and Shumar (1995, pp. 89-92) all point to the increased managerialism of
higher education and the proletarianisation of the academic profession. Ritzer (1993, pp. 55-57, 73-77, 115-116, 141-142) holds that in the United States education, including higher education, has been subjected to a process of ‘McDonaldisation’ marked by ‘the culmination of a series of rationalisation processes that have been occurring throughout the twentieth century’ that are best exemplified in the practices of the McDonalds fast food chain (Ritzer, 1993, pp. 31-32). Ritzer’s McDonaldisation thesis is situated in Weber’s theory of rationalisation; analysing universities he points (pp. 55-57, 73-77, 115-116, 141-142) to the pressures for efficiency (larger classes, reliance on resource-based learning and particularly customised textbooks, use of machine-graded multiple choice questions for assessment), calculability (use of Grade Point Averages to summarise in one figure a student’s achievement, quantified examinations to filter applicants, student rating forms to evaluate professors), predictability (imposed by the format and grading of multiple choice questions, thus eliminating subjective judgement on the part of professors), control (training students to accept highly rationalised procedures such as objective testing, timed lesson plans, the definition of what is to be taught in particular lessons), and as an outcome, the growth of irrationality with many staff and students put off by ‘the huge factory-like atmosphere of these universities’ where education can be ‘a de-humanising experience’ in which it is difficult for students to get to know other students and virtually impossible for them to know their professors (pp. 141-142).

In organisational terms this reflects the shift from a communal model of organisation based on personal relationships (including partnerships, federations, and craft networks) to a bureaucracy based on the rational definition of office. The nineteenth-century emergence of bureaucracy was inevitable because, in situations where communication travels up and down hierarchies it is a much better system for organising large numbers of people in the pursuit of goals. By the late nineteenth century it had emerged as the clear organisational winner in the civil service, in large firms, in the armed forces and in schools (Hamilton, 1989, p. 139). Traditional universities only began to be significantly affected by this trend in the latter half of the twentieth century as they began to grow bigger.

In contrast to traditional education, distance education (other than very small systems which can be run as craft enterprises) has for many years been regarded as an industrialised process. Peters, in his early writings (Peters 1967, 1973, 1983) argued that all distance education is an
industrialised form of education involving such characteristics of Weberian bureaucracy as rationalisation, the division of labour, increased managerialism, the loss of labour power, increased mechanisation, the use of capital intensive technology, and an assembly-line approach to production. Rationalisation involves careful analysis of the entire production process, planning and specifying each work process to ensure efficient and effective contribution towards the achievement of business aims. In distance education this involves a redefinition of the labour process such that the integrated craft of teaching is broken up into constituent parts. Generally speaking, the overall task can be divided into at least six distinct phases which could be undertaken by separate people: curriculum design (specifying what is to be taught), instructional design (saying how it is to be taught), content preparation (authoring teaching materials), tutorial backup (supporting students with subject-based problems and learning difficulties), continuous assessment (involving both evaluation and teaching through feedback on assignments), and examination. There are a number of reasons for this division of labour. It takes longer to design and develop one hour’s worth of student learning taught by print or broadcasting or computer-assisted learning technologies than it does to prepare a one-hour seminar or lecture, so any course covering a sizeable curriculum requires several and perhaps many academics working in a team to develop it. Smaller modular courses, of from thirty to fifty hours of student learning, may of course be developed by a single academic. Also, the use of materials enables very large numbers of students to enrol on a course, requiring the appointment of a team of academics to mark assignments and examination scripts and perhaps conduct local tutorials. As a result the teaching process is often divided between many people – one group that designs and writes the materials and another that tutors and assesses the students.

Teaching students at a distance cannot be done without the use of technologies to deliver media such as text, audio, video and computing. Many of the technologies require production expertise that academics lack so that production becomes a team activity involving professionals and technical staff from a range of industries (broadcasting, print, computing, etc.). This adds to the fractured complexity of the labour process. However, it also changes the nature of the lesson from something that, however well-planned in advance, is essentially subject to the exigencies of the moment within the classroom, to something that is a standardised product that can be delivered to theoretically unlimited numbers of students. As Peters comments (1983, p. 99), ‘the rationalisation effect of mass production becomes apparent here’. Similarly, Lewis’s work on the planning and scheduling of course production at the UK Open University showed how rationalised and planned the process of production could be (Lewis, 1971a, 1971b); different institutions approach the development and production task differently, with some employing a chain approach in which work is passed
from one person to the next in line, as on an assembly line; others using teams of academics, editors, producers, etc. On the delivery side, the number of tutorials are defined and their pacing pre-determined by course calendars; tutors on some courses are given detailed course notes suggesting topics and approaches for tutorials; assessment is standardised as much as possible through marking schemes; and tutors are told how to comment on scripts. The emphasis on planning, the formalisation and standardisation of processes and procedures, and the organisation of activities, underline the Weberian characteristics of distance education.

The division of labour - and the need to plan and control the production and delivery processes - mean that the individual academic no longer controls the whole process of teaching (Rumble, 1981, p. 182). This reduces the autonomy of the individual academic to decide how courses will be taught and assessed - the decision-making powers often passing to administrative staff and committees. Distance teaching universities are characterised by the strength and power of the committees controlling academic processes. As a direct result some commentators have seen a process of academic deskilling and loss of labour power associated with the division of labour and the rise of managerialism in distance education (Peters, 1983, pp. 100-105, 108; Peters, 1989, p. 5; Campion & Renner, 1992, p. 10; Raggett, 1993, pp. 25-27). The extent of this deskilling is disputed, though there is general agreement that those who just tutor and mark assignments and scripts have narrower, less skilled jobs. On the other hand, many of the academics responsible for designing courses have acquired some of the production skills previously held by specialist professional producers. This may account for the enthusiastic support some academics give ‘instructional design’ and distance education (Campion & Renner, 1995, p. 81). Certainly, highly specialised workers often have considerable levels of discretion over their work process (Child, 1984, pp. 26-27). However, the disempowerment of academic labour has been increased recently by the search for market-generated income, so that what academics do is determined by their institutions and the requirement to bring in money, at the expense of non-market directed activity, diversity and innovation on the one hand, and the individual autonomy of the academic on the other (Marginson, 1995, pp. 32-36).

Mechanisation enables many thousands of standardised teaching packages to be produced. Indeed, distance education lends itself to mass production but, as Peters (1983, p. 102) points out, mass production is only possible ‘where there is a sufficiently large “mass of consumers”’. Attempting to meet demand, traditional universities have increased the size of their teaching groups so that ‘today’s practice of applying methods designed for small groups to large groups must be
seen as a perversion of an educational concept’ (Peters, p. 102). Distance education achieves the same end through different means. The intermediate product of this process is the teaching package which is the main vehicle for teaching students; the final product is a student who has been taught. The more the nature of the product is pre-determined, and the processes governing its development and production standardised and formalised, the more the production process as a whole loses its subjective element, and the more the craft-like nature of the process is objectified (Peters, 1983, p. 108). In distance education the scope of individual teachers to follow their own inclinations, to digress, to change their methods, to adapt the content, is limited, pushed to the sidelines of an infrequent tutorial or marginal comment on an assessment script. What the student consumes is a standardised package. The student, though, is all too often a passive or minimalist consumer at that. Thus Harris (1987, pp. 112-114) describes the fictional Open University student, Mr Wavendon, a man who ‘wanted a degree to consolidate his position as a teacher, even though he believed that degrees were now “devalued”, because everyone in teaching now seemed to have one’, and who takes an entirely instrumental approach to his studies, focusing exclusively on the assignments (where marks count towards passing the course) in which he tells the assessors ‘exactly what they want to hear’, and who manages to pass the course without ever entering into a dialogue with the content. In higher education, though, ‘what is important is argument between people, unconstrained discussions that raise “validity claims” of several types, and which settle these claims only by the force of better argument’ (Harris, p. 142). For Harris, however, ‘distance education on the OU pattern at least, is the only form of higher education specifically designed on any other basis than the democratic discussion’ (p. 142). This is dangerous. As Ritzer (1997, p. 3) remarks, ‘the functional rationalisation that would be associated with a process like McDonaldization poses a threat to substantial rationality, or the ability to think intelligently. ... That is, McDonaldized systems (through rules, regulations, scripts, and so on) do encroach upon, and ultimately threaten, the ability of those involved in them to think intelligently’.
From Bureaucratic to Interactive,
Post-bureaucratic University Structures

The bureaucratisation of academic work and the loss of individual autonomy have led commentators such as Campion & Renner (1992, p. 11) to argue the need for an alternative approach that will give academics greater control over their work. If academics are to regain control over the whole teaching-learning process then at least three things need to happen. First, the course modules must be small enough so that a single academic can develop them. The Open University’s model of very large distance-taught modules requiring many hours of development time, and hence large course teams, divide the work up between too many people, leading to the need to vest control elsewhere. Second, the number of students studying the course must be no greater than one person can handle in terms of marking assignments, responding to mail, emails and telephone calls, and successfully moderating a computer conference. Third, control over the various administrative processes has to be devolved to (perhaps, given back to) the academic – who sets and marks the assignments, monitors the students’ progress, and is responsible for updating students’ records. It is here that third-generation distance education systems come into their own. The pedagogic payoff could be (at least, in the best of circumstances) that dialogue is placed once again at the heart of the educational process. Some commentators are now linking IT and constructivist theories of learning (e.g. Jones, 1995; Collis, 1996, p. 135) and collaborative communication patterns – suggesting that the payoff is there to be had.

By putting the user in direct contact with the prime service provider, the Internet has eliminated the need for any organisational intermediary between teacher and student. Individual academics can develop a curriculum and materials for an Internet-based course and teach it from their own Web site. This is an electronic version of the way some of the early correspondence schools developed as one-person bands. The main problems for the individual academic are: first, ensuring an organisational framework that allows them freedom with remuneration; second, establishing their reputation; third, publicising their course; and fourth, getting their course accredited. The Internet – by resolving these issues – provides opportunities for the evolution of a new kind of university that in some way parallels the emergence of the intellectual as an artisan in the twelfth century and of the corporate university in the thirteenth century.

The term intellectual, as used here, ‘denotes those whose profession it was to think and share their thoughts’ (Le Goff, 1993, p. 1). Such
persons begin to be identifiable in the twelfth century as masters and students congregated in urban centres such as Paris, Chartres, Reims and Orleans; others, the goliardic or wandering clerks or vagabonds, exploiting the social mobility that characterised the age, moved from town to town. The town intellectuals of the twelfth century saw themselves as artisans, professional men whose function was to study and teach in schools that ‘were workshops out of which ideas, like merchandise, were exported’ (Le Goff, p. 62). Some time in the twelfth century, these intellectual artisans began to organise themselves within corporations or colleges of masters and students, out of which the universities developed.

The universities that emerged from this process were essentially ecclesiastical corporations whose goal was a local monopoly – secured through the right to confer university degrees. Although practices varied, the examination process was usually a staged process, broken down into two major parts, the first leading to the conferment of the bachelor’s degree, the second to the conferment of a licence to teach (the master’s degree) (Le Goff, 1993, pp. 77-79). Once embarked on a career as a master, the intellectual faced a practical problem: how to live. Masters were paid from two sources: salaries and stipends. Salaries, reflecting the master’s position as a worker, were derived from on the one hand the master’s students and on the other the civil authorities. Stipends or scholarships were gifts from private benefactors, public organisations and civil authorities. These different options, as Le Goff (1993, p. 93) shows, had important consequences: ‘If a master received a salary, he could be a merchant, if his students paid him; or a functionary, if he were remunerated by the communal or princely powers; or a sort of domestic, if he lived off the generosity of a benefactor’. Masters who lived off the money they were paid by their students had the advantage that they were free of temporal and ecclesiastical powers and private patrons: ‘This solution seemed natural to them for it conformed the most with the habits of the urban workplace of which they considered themselves to be members. Masters sold their knowledge and instruction the way artisans sold their wares’ (Le Goff, 1993, p. 94).

Current technological developments in telecommunications and computing, coupled with developments in the labour market, have opened up opportunities for academics to redefine their relationship
with the university in ways that parallel the relationship between the twelfth and thirteenth-century university and the intellectual. At the technological level these developments include:

- advances in telecommunications and computing and the development of information technologies;
- the installation of information and communications platforms which allow everyone in an enterprise to be linked both to a common source of organisational memory and to each other;
- the existence of personal, portable technologies allowing mobile tele-working which enable academics to break physically with the university. Like their students they can work at a distance from their university.

The organisational framework within which such people work is very different from the highly bureaucratised world of the late twentieth-century university. Organisational analysts such as Hechscher (1994) believe that we are witnessing the emergence of new organisational forms - the post-bureaucratic organisation. Hechscher suggests that the best analogies for post-bureaucratic organisations are the organisation of science (where people and projects are selected with great efficiency through formalised peer review processes) and the professions. Such organisations differ from bureaucracies in that, whereas in a bureaucracy with its rational definition of office and hence of work, ‘people are responsible only for their own jobs’ (Hechscher, 1994, p. 20), the key to post-bureaucratic organisations is ‘an organisation in which everyone takes responsibility for the success of the whole’ and in which the relationships between people ‘are determined by problems rather than predetermined by structures’ (Hechscher, p. 24).

Modern telecommunication and information technologies enable communication to take place in spite of personal mobility, the distance between people, and time differences in their availability. In the context of emerging third-generation distance education systems and virtual universities and colleges, the technological framework requires individuals to have access to the Internet from wherever they happen to be, but most importantly from their homes. This becomes the platform upon which:

- students and teachers can communicate with each other and with other students and other tutors, one-to-one or within any defined group, on a global basis;
- students and tutors can access electronically stored resources on a global basis;
- students and tutors can access information, advice, and administrative and support services.
Developments in telecommunications and computing thus offer opportunities for networked interaction. Building on traditional academic values that mesh well with the values of post-bureaucratic organisations, this provides the basis for the emergence of a new kind of university. Borrowing from Hechscher’s preferred term, the ‘interactive organisation’ (Hechscher, 1994, p. 24), I call this the ‘interactive university’.

We can begin to see inklings of what might be in some of the new computer-mediated communications (CMC) based courses that are coming on stream, and in organisations like the Global Network Academy or GNA (providing postgraduate courses over the Internet), the Diversity University (a MOO or Multi-user Object Oriented based-system delivering courses and providing an environment for informal personal interaction), and the GENII Lab School (an on-line teacher training centre). Such systems link CMC-based environments with electronic library environments providing access to course materials. CMC provides a basis for interactive communication between students, those who are tutoring them, those who create the learning materials, and those who manage and administer the system. But there are other changes of a structural kind: the Global Network Academy initially had a very small core of permanent staff who took the decisions while depending on volunteers to offer courses based on hypertext-based libraries accessed through the Internet, with an on-line library and an index of experts whom students could consult. In late 1994, however, GNA was re-organised into a consortium of different schools – chartered on a variety of administrative and financial platforms (Hall, 1994).

Clear organisational patterns are hard to detect. However, the real key to progress may be in the emergence of new financial relationships between teacher, student and university. What follows is speculative – a vision of what an interactive university might look like. The technology is important because it provides a framework for the rest. Individual academics can create an electronic course and put it up on the Internet. The global reach of the Net means that they can live at a distance from the university. In other words, just as first and second-generation distance education liberated students from the need to live near the university, but required academics to continue to do so if they were to play a significant part in the development of courseware and the governance of the institution, so now third-generation distance
education systems enable academics to break away from the university. The fact that the individual academic can put their own course up on the Internet is also important. Potentially, we have the modern day equivalent of the twelfth-century goliardic or wandering scholar, a global artisan in the knowledge industry, able to publish on the Internet and attracting students who wish to learn from them. Moreover, like their forebears who saw themselves as artisans in workshops for ideas, so academics exploiting the Internet can operate in a society geared to consumerism.

The main difficulties faced by the academic were mentioned earlier. First, ensuring an organisational framework that allows them freedom with remuneration; second, establishing their reputation; third, publicising their course; and fourth, getting their course accredited. The first problem is the most interesting one. One model might be to develop a community of partners (academics) licensed to teach by the university. Students wishing to take their course would be assigned to them rather as lawyers working in a chambers are given cases. The success of the ‘chambers’ as a whole would be everyone’s responsibility – thus reinforcing the post-bureaucratic nature of the relationship between the individual teacher and the university. Within this structure the individual academic would then be responsible for preparing the students towards the examinations. Individual academics would have the flexibility to choose how many courses they teach and how many students they support. This flexibility would enable them to undertake other, perhaps more highly paid work as symbolic analysts (Reich, 1991, pp. 177-179, 182-184). This would have the advantage that their practical experience in the world of work would feed back into their courses.

The other problems are easily solved. While there will always be some academics who have an international reputation and who are able to offer courses on the Internet and make money from it, the majority will need to work through an organisation that can in essence guarantee their status as a teacher. This would be solved by having a system that licenses someone as a university teacher. The licence might be granted by the university itself or by an external authority. The third problem (of publicising the course) is a technical matter, though the success in publicising courses may well depend on the reputation of
the university as much as that of the individual academic. The final problem (of accreditation) also rests with the university as a body licensed to approve courses and grant degrees. The central function of an interactive university is thus to provide would-be learners with opportunities to engage in the study of courses towards a degree and to validate their learning. Many students, perhaps the majority, will be in employment and highly mobile and they will expect to be able to continue to study when they move within a jurisdiction or between jurisdictions. CMC-based courses using the new knowledge media will support these students on a global basis. The global reach of such courses will enable universities (as many already do) to enrol students irrespective of the jurisdiction where they are resident. Because students may wish to move between universities, carrying their accumulated credits with them, there will be pressure for regional (e.g. Latin American) and global Credit Accumulation and Transfer (CAT) schemes. There will be some difficulties in doing this, because of the number and range of quality of institutions, and so there will be an increasing number of national and international validating bodies that help (enable) students to package their credits into meaningful awards of assured quality. Whether an institution’s credits are recognised or not by a validating body may become a significant factor in access to the global education market.

The key to this structure is the way in which academics are paid and the way in which resources are generated. The final section looks at this issue.

**Financing the Interactive University**

In the scenario outlined above, the university is organised not so much around physical resources and their use, but around information, linking the progenitors of information with those that want to use it. The ethereal assets of the university and of its teachers become very important. For the purposes of definition:

an ethereal good ... is one that is not tangible, not expropriable and can be copied easily, at a cost that is less than that of a bona fide version. .... It is not tangible, in that it cannot be touched. Nor is it expropriable in that, although I can get back what I gave you, you may have made copies: so just getting back what I gave you is no insurance that you no longer have it. Such a good is clearly appropriable, but never expropriable with certainty. It is these unusual characteristics that lead
to the fundamental problems in dealing with ethereal goods, namely the problem of property rights and the difficulty of evaluation. (Thompson, 1982, p. 16)

As Thompson remarks, property rights and evaluation are closely linked: ‘Property rights are only important when there is some value in the property’ (1982, p. 16). In first and second-generation distance education systems the problem of ethereal goods did not arise because property rights over information were closely tied to the physical entities (books, records) that carried the information. It was these physical embodiments that were assigned value. In effect the information went along free. But technology, having initially made illegal copying much easier, has now cut the relationship between information and any physical embodiment in its carrier. The problem is thus both to protect what can be easily appropriated and to find ways of assigning value to it and collecting that value when it is used.

The University of South Australia exemplifies the problems (URL at January 1998: http://www.unisa.edu.au/flc/). Given the restrictions imposed by current copyright law, the University decided not to use third-party material in its on-line courses because there can be no question of individual students making a copy under ‘fair dealing’ provisions (Moran, 1996). But even if there were no legal problems of this kind, there is a need to protect against indiscriminate copying and re-use of copyrighted materials. There are technical solutions to some of the issues raised: protection can be afforded through encryption (scrambling documents), steganography (preserving their integrity), and ‘watermarking’ (building in electronic traces to trace infringement). Another issue will be to ensure within an electronic environment that copyright owners are paid for use of their intellectual property. Direct billing on access to materials will solve the second issue. Indeed, electronic billing and payment methods will enable students to be charged for materials, ethereal goods, and services, as the occasion demands.

What is interesting about these developments is that the money flows from the user to the originator of the information, goods or service. In an electronic interactive university this would be the equivalent of the twelfth-century intellectual being paid direct by his students. The University also provides services – for example, brokering and examination services. These services also need to be paid for. Thus the university needs to charge students for central services. But the teacher is also getting something from the university: support in the form of publicising courses and finding students. Academics might also be
‘charged’ a percentage for these ‘overhead’ services. The various
services would be paid for as they are consumed, with money flowing
electronically from the student to the academic or the university, and
even from the academic partner to the university ‘chamber’, as appro-
priate. These arrangements, once in force, would enable a much
looser, interactive structure to develop. Academics would have
regained greater control over their work. Both teachers and students
might be involved part-time, with other jobs and responsibilities.
Expansion and contraction would be easier.

Administratively, then, the university becomes a broker between the
academic and the would-be learner. Its functions would be:

x to have an efficient (low-cost), effective (responsive) logistical system that
responds to would-be learners. Telephone and computer based services
and advice lines will need to respond on a global basis, twenty-four hours
a day;

x to identify and license teachers;

x to act as a broker between students interested in studying a subject, and
academics willing to teach a subject – in effect putting the one in touch
with the other;

x to examine the students, or to put students forward for public
examinations;

x to provide a hub around which academics may work.

Could it happen? The technology is available. What is needed is the
commitment to create the organisational structures, payment structures, and
relationships, that will enable the post-bureaucratic university corporation to
emerge. Such structures, reflecting the enabling function of the underlying
technologies, and based upon a commitment to establish and maintain new
social forms within the university, will be well suited to meeting the lifelong
learning needs of the labour force, and most particularly those of highly
mobile knowledge workers.

Even within the highly industrialised Open University, there are point-
ers to a way forward: the University’s PGCE programme can be
deconstructed into the constituent relationships of a student, a tutor, a
licensing authority (the University), a school (within which the student
does his or her practice), and a school-based mentor for the trainee.
Students have to build up their portfolios, which are then assessed. In
the National Extension College, students preparing themselves to take
a London External degree can ask for tutorial support, which they pay
for as they use it. Students and tutors negotiate the subject of the
assignment. The College’s job is to validate the tutor and put him or
her in touch with the student. If the payment routes are not yet directly
from the student to the tutor, some of the other ingredients in a
networked approach to education are slotting into the place. Such
models retain the advantages of flexibility that distance education has
for the consumer, together with the freedom to opt out and find
another teacher, yet put the academic back in control of the manage-
ment of their relationships with their students. If the prospects of
employment are uncertain, the conditions within which that work is
exercised must be better than the alternative vision of a university
articulated by Ritzer (1997) in his most recent book, *The McDonal-
dization Thesis*, where he discusses universities within the context of the
wider post-modern, consumerist society. Universities, he says, are
means to educational consumption (Ritzer, 1997, p. 151). He cites
Levine (1993, p. 4) to the effect that all students want of higher educa-
tion ‘is simple procedures, good service, quality courses, and low
costs’. In responding to such demands, universities will, he suggests,
learn most by looking for answers among those who have successfully
responded to consumerism (p. 153). This will include cost cutting (to
reduce costs to students), the removal of barriers to success (though
grade inflation and dumbing-down in order to reduce failure), decen-
tralisation to satellite campuses (to be nearer the student), use of
technology (to provide home-based education) (pp. 154-157). Creden-
tialling will become much more important as a result, since it is this
that will distinguish one consumer from another. To ensure uniformity
across the satellite campuses, professors will be scripted and course
content pre-determined. Courses will respond to student needs and
wants, and not be part of a wider canon built into a curriculum (p.
158). Within this scenario, ‘those who teach at McUniversity and its
satellites are unlikely to be full-time tenured faculty members ... Most
will be part-timers brought in to teach a course or two. Their pay, like
that of employees of fast-food restaurants, will be low and their
benefits few, if any’ (p. 158).
Virtual universities such as the Teacher’s University, the Virtual
On-line University, and the Mind Extension University are now being
set up. Many of these approaches will also be McDonaldized. But
there is a choice: it is possible to devise approaches based around
constructivist models that will enable academics and students jointly
to construct a curriculum and a path through learning, and that will
leave the academic and the student in control of the relationship. The
key will be to keep it small in order to maintain personal relationships between teacher and students. And herein lies a potential problem: such systems are likely to cost more because labour will be (relatively) expensive.

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