

The Industrialisation of Higher Education: Knowledge Products and Knowledge Businesses

John H Howard

This Paper is an extract from Dr John Howard's PhD thesis, "Business, Higher Education and Innovation: Institutions for Engagement in a Mode 2 Society". Thesis submitted in fulfilment of requirements for PhD. The University of Sydney, 2004

In 2004, Australia was a relatively small player in the international education market compared with the US and Canada. Governments have sought to facilitate Australian entry through deregulation and support in obtaining market access. Several Australian universities have set up campuses in offshore locations and several have joined the international collaborative networks of overseas universities. By 2014 Australian had become a major player in what is now a globally competitive higher education market.

This paper explores the institutional settings and policy changes that enabled the Australian higher educator sector to move from an education 'sector' to a major services industry and major exporter – Australia third largest after iron ore and coal.

Background

Several years ago, in a *Learning Partnership Roundtable* hosted by global professional services firm PricewaterhouseCoopers on the transformation of higher education in the digital age identified three broad trends that were challenging higher education institutions to evaluate their existing strategies (PriceWaterhouseCoopers). These were:

- Changes in market demand – the 40-59 year demographic, which is the fastest growing demographic, are expected to seek additional education; lifelong learning has become a necessity, which is, in turn increasing the size of the potential learning market; potential students are also more demanding as to availability (time and place), one-stop, cost effective, technical (but personal), integrated, consistent and dependable.
- The competitive structure of the industry – there are more suppliers, including corporate and on-line universities (the University of Phoenix enrolls 40,000 students across geographical boundaries) and corporate training programs that offer university degrees.
- The impact of technology – the development of instructional software (research reported that the creation of 25 courses would serve an estimated 80 percent of total undergraduate enrolment in core undergraduate courses); the costs of software development are high and maintenance is required. Technology also removes significant barriers to entry, by removing the need for campuses and full-time faculty.

The Roundtable report observed that

The very structure of higher education is poised for change. As has occurred in other industries, it is likely that there will be mergers, consolidations and shakeouts (PriceWaterhouseCoopers).

The changes are unlikely to occur immediately, and there will be substantial resistance, particularly from education unions. The point being made here is not whether the changes are desirable or not, but to suggest that there is a process of industry restructuring and, as with other industries, the major players need to respond and adapt. Preventing change is not really an option, but seeking to influence and direct it, is. That is the task of strategy.

The impact of these changes in the way research is undertaken and the expectations relating to education services has implications for the way in which higher education is structured and organised as an *industry*. This is discussed below.

Knowledge production and the industrialisation of higher education

Industrialisation involves a substantial change in the methods and focus of production, distribution and exchange. Those changes generally involve moving from an extensive mode of production to an intensive one aided and assisted by technological invention and an environment that encourages and supports entrepreneurship (Jones 1988). For example, the agrarian revolution involved changes in methods of production that made more effective use of land; industrialisation in textile manufacturing involved moving from the putting out system to the factory system where it was possible to achieve greater coordination in the quantity and quality of output; industrialisation in steel involved capturing economies of scale associated with large capital investments.

Large-scale production also requires the input of people (managers) who can coordinate a division of labour based on specialisation of task. The division of labour relates not only to production, but also to distribution (marketing) and managing exchange relationships. These are essentially supply side issues; demand considerations have been equally, and perhaps more, important in driving industrial change. That is, increasing population, rising real incomes and changing tastes and preferences pull through the processes of industrialisation. Industrialisation is also associated with substantial change in social relations. The demands by, and for, knowledge workers in the service industries have been an important driver in expanding business education, particularly at the graduate level.

In manufacturing, the industrial revolution involved a change from a society based on agriculture to one based on automation, scientific development, division of labour, and the replacement of barter with a money exchange. There was also a change in the social relations within industry – between the owner, the employer and the employed. This was reflected in the factory and later in the multi divisional enterprise which required professional managers to establish mechanisms and procedures for planning and control. This change was also reflected in markets where trade was established and negotiated through agents and brokers. Financial institutions also emerged to facilitate trade. However, change was not evenly distributed or impacted throughout industry: craft production still prevails in highly specialised and high value added segments of the textiles and footwear industry for example. Industrialisation established segments and diversity.

The point being made is that industrialisation not only involves change within an industry, it also involves an evolution of institutions that work at the interface between an industry and other industries. The industrial revolution in manufacturing was associated not only with institutional change *within* manufacturing industries, but there was also an institutional evolution *between* manufacturing industries and their financiers, suppliers, distributors, retailers and customers. This is reflected in the current interest in supply chain management, particularly in the global food industry (Howard 2000a).

In higher education some see an academic revolution involving a change from the creation of knowledge in a community environment that values scholarship and sharing of knowledge among a community of science, to the production of knowledge in market and/or organisational environment, where knowledge is created, propertised, valued and exchanged through market transactions and managed relationships. But as with the industrial revolution these changes are unlikely to occur through all segments of the higher education sector. Nor will market or organisation based systems of production necessarily replace the community based framework. New institutional arrangements will inevitably emerge within and alongside existing arrangements. Industrialisation is associated less with conformity and more with diversity and segmentation in an industry.

There are many, however, who resist change and seek maintenance of a status quo and a return to traditional values and ideals of the Humboldt and Newman Models. There are others, who excited by the prospects of a greater role for universities in commercial application of discoveries and inventions, see endless possibilities for industrial development from university-sponsored start-ups. Former Vice Chancellor of Melbourne University, Alan Gilbert, has observed:

Terminal threats to traditional attitudes, practices and processes create revolutionary opportunities for bold entrepreneurs aware of the potential of new technologies and new forms of industrial organisation.

Higher education is experiencing just such a revolution at the beginning of the third millennium. It is a revolution driven by mass demand, the imperative of continuing professional education in a global knowledge economy, and the enabling consequences of revolutionary information technology and communications (Gilbert 2000). This academic revolution needs to be understood in the context of the higher education industry and the emergence of new institutions that operate at the interface between knowledge production and knowledge application.

As with revolutions in other industries, those who create knowledge in this new academic industrial order may not necessarily be those responsible for its dissemination and application. This applies in teaching as well as research. In teaching, global providers and integrators have introduced a separation between course design, course delivery, and course assessment. In research, industrially applicable research is undertaken through research centres created as joint ventures, partnerships and strategic alliances. Venture capital emerged as an asset class for the commercialisation of discoveries and inventions where knowledge can be captured and registered as Intellectual Property (patents, trademarks, designs, and copyright). Similarly, management capacity and capability has emerged as a skill required for ensuring successful performance in industrial research centres (Howard 2003b).

Education integrators, research centres, and venture capital investors represent institutions of engagement between higher education institutions and industry. These institutions allow researchers and educators to direct attention to the mission and purpose of their own institutions without having to compromise their core purposes. They do not have to interpret market demands and expectations, for example. This is the task of engagement institutions. It follows that pressures placed on higher education institutions, particularly by venture capital investors, to be more commercial in terms of responding to market signals is mis-directed and has the potential to inflict severe damage on their structure, routines and cultures (Bok 2003).¹

Thus, the feature of industrialisation in higher education is a focus on knowledge production and the emergence of new forms of relationships between higher education institutions, industry, and more broadly, community organisations and government agencies. Relationships are seen less in terms of transfer and more in terms of market based transactions and managed relationships. The processes of communication and interaction implied in the term transfer are still in evidence, but they are increasingly under-pinned by intermediaries (such as education integrators, technology transfer offices and venture capital investors) and organisational arrangements (such as research centres and centres of excellence).

In January 2003 the British Government released a White Paper, *The Future of Higher Education* that set out a policy framework directed towards: improving the funding of research and strengthening the work of universities in supporting regional economies; improving and rewarding excellent teaching; and enabling more people to enter higher education (Great Britain. Parliament 2003). The policy is now in the process of implementation.

In Australia, the industrialisation process has occurred over a 20 year period, commencing with a Government decision to introduce a unified national system of higher education. Change has been slow and progressive, but culminated in May 2003, when the Government introduced a range of initiatives set out in the policy paper *Our Universities: Backing Australia's Future* intended to provide a framework for change. The policy principles relate to sustainability of institutions, quality, equity and diversity. It is intended that the reforms will:

. . . establish a partially deregulated system of higher education in which individual universities are able to capitalise on their particular strengths and determine the value of their course offerings in the market place. There will be a renewed emphasis on teaching

¹ In the original, or classic, concept of venture capital, the venture capital investor performed the engagement function between science and society, working at the interface between the research and commerce. They performed a new

and learning outcomes, greater recognition of the role of regional campuses and institutions, and a framework for research in which all Commonwealth funding is either competitive or performance based (Australia. Minister for Education Science and Training (Hon Brendan Nelson MP) 2003).

By and large higher education institutions have embraced the changes, although there has been political and industrial opposition on a number of fronts, particularly in relation to employment terms and conditions. The changes encourage and stimulate the development of a differentiated higher education industry structure that is responsive to business and societal needs.

The emergence of an education industry structure

In a general sense, an industry is defined by a pattern of ownership, the intensity of competition and the economic power of industry participants. More specifically, however, industry structure involves the organisation of participating firms and their relationship to one another, their strategic competitive advantages, market shares, sustainable rates of growth, costs and profitability, pricing power and tactics, as well as other marketing practices. It concerns the perceptions of companies, their products and services by customers, consumers, other businesses and government agencies.

The industrialisation of higher education has been associated with the emergence of new entities, the strengthening of existing ones and the disappearance of others. Strong vested interests can delay, but rarely prevent this process from working its way through. Contemporary management writers see industrialisation as involving a process of “creative destruction”.² Following patterns in other industries, some higher education institutions will emerge as multidivisional conglomerates whilst others will develop as niche players associated with high quality in a particular line of product or service. There will be others that will balance low price with basic quality.

These considerations point to the need for higher education institutions to adopt a strategic approach to developing their knowledge products and serving their markets. In this environment not all universities can, or will be, the same. Not all universities will be equally good in producing the full range of knowledge products.³ This point had been made strongly in submissions to the recently completed Higher Education Review (Australian Industry Group 2002b; PricewaterhouseCoopers 2002).

The industrialisation of higher education should be seen as the beginning of the evolution of an industry rather than its culmination. According to Michael Porter “the grandfather of concepts for predicting the probable course of industry evolution is the familiar product life-cycle” based on the hypothesis that industries pass through a lifecycle of introduction, growth, maturity and decline. The stages are defined by inflection points in the rate of growth of industry revenues. The growth pattern follows an “S-shaped” curve reflecting the processes of innovation and diffusion of new product (Porter 1980).

Broadly, the flat introductory stage of industry growth reflects the difficulty in overcoming buyer and supplier inertia and gaining acceptance of the newly defined “products” and “services”. Rapid growth occurs as buyers rush into the market once the products have gained acceptance. In the maturity stage, penetration of the product to potential buyers has been reached causing rapid growth to level off to an underlying rate of growth. Finally, growth eventually tapers off as new substitute products appear. As industries go through the cycle, the nature of competition shifts and industry structures configure and reconfigure (Porter 1980).

Porter suggests that instead of trying to describe industry evolution it is more useful to look beneath the cycle at the process to see what the drivers of change are and how they operate. He

² Reference is made to the Schumpeterian view that economic progress involves the restructuring of industries through processes of “creative destruction” (Foster and Kaplan 2001b).

³ The range of knowledge products is described in Chapter 7.

suggests that like any evolution, industries evolve because some forces are in motion that create incentives or pressures for change (Porter 1980).⁴ Porter notes:

Every industry begins with an *initial structure* – the entry barriers, the buyers and supplier power, and so on which exist when the industry comes into existence. This structure is usually (though not always) a far cry from the configuration the industry will take later in its development. The initial structure results from a combination of underlying technical characteristics of the industry, the initial constraints of small industry size, and the skills and resources of the companies that are early entrants. . .

The evolutionary processes work to push the industry towards its *potential structure*, which is rarely known completely as an industry evolves. Imbedded in the underlying technology, product characteristics, and nature of present and potential buyers, however, there is a range of structures the industry might possibly achieve, depending on the direction and success of research and development, marketing, innovations and the like (Porter 1980).

Porter notes that the life-cycle concept has attracted substantial criticism. This relates to variation of the stages between industries, the sequencing of stages (some industries may skip stages altogether), firms can influence the shape of the curve through product innovation and positioning and that the nature of competition in each stage is different for different industries. Nonetheless, the concept is useful for describing a pattern of evolution rather than predicting it. What is important about the lifecycle for the higher education industry is that it is currently at the *introductory* stage. As the critics of the lifecycle concept would suggest, businesses in the higher education industry can shape its future through innovation, positioning and responding to competition.

The industrialisation of higher education has been evolutionary, rather than revolutionary. Industrialisation reflects a build up of forces and influences that have been at work for quite some time.⁵ It is not possible to point to some event, or series of events that caused the industrialisation of higher education. It is possible, however, to identify the contributing factors. These factors include a range of external environmental factors, some driven by public policy initiatives and others driven essentially by demand for education services and multi-disciplinary research. A common thread in much of the change and reform process has been a desire by government for greater engagement between higher education, industry and regional economies. This is reflected in a series of papers, reports and policy initiatives in Great Britain, Australia and more generally in the OECD community.

The evolutionary process is reflected in the observed movement towards the new mode of knowledge production, “mode 2”, or the creation of knowledge in application (Gibbons, *et al.* 1994; Nowotny, *et al.* 2001) as discussed in Chapter 2. In the course of industrial evolution the traditional role of the university in the creation of disciplinary knowledge is now seen as sitting within a much more pluralistic system for the creation of scientific and technical knowledge. At another level there is a robust discussion of the “enclosure of the commons” of public knowledge created in a university environment through the processes of commodification and propertisation associated with the vesting of Intellectual Property rights and the marketing of those rights through institutions of engagement.

⁴ Porter proposes the analytic device of the “Five Competitive Forces” to address and analyse the evolution and status of an industry structure. These are: the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among existing competitors

⁵ Similarly, the “Industrial Revolution” which involved a change from a society based on agriculture to one based on automation, scientific development, division of labour, the replacement of barter with a money exchange, and reflected in rising real incomes, is generally regarded as having occurred over the period 1750-1860. More thorough accounts suggest that the underlying forces of change were at work perhaps 200 years earlier and the change process was more evolutionary than usually appreciated (Jones 1988). The “revolution” was a culmination of pent up economic factors whose translation into substantial industrial change was facilitated by non-material values (culture) and enabling institutions (Landes 1998). The observed Industrial Revolution also reflects demand influences, associated with demographic change, rising real incomes and an expansion of trading opportunities facilitated by intermediaries and entrepreneurs. It was also associated with the introduction of new firms and substantial competition that, together with new technologies, resulted in falling costs, new products, new substitutes and increased profits.

On the education side, and if the prognostications about the knowledge economy are correct, there will be an “explosion” in the market for learning associated with new learning technologies and lowering barriers to entry. Using Porter’s competitive forces framework (Porter 1980) it is possible to point to the prospect of substantial restructuring in the higher education industry:

- Entry of new competitors
- Threat of substitutes
- Bargaining power of buyers
- Bargaining power of suppliers
- Rivalry among existing competitors.

Individual universities will, in the new industrial climate, need to consider their positions in the light of domestic and global market considerations. In Australia the industry has started to undergo a segmentation process, based on a grouping of institutions with similar characteristics. These segments have become defined progressively over the last two years. They are:

- The “Group of Eight” universities, which constitute most of the oldest universities (except Tasmania) and have a very high commitment to research
- The “Innovative Research Universities” – a grouping of newer universities with strong research commitments and located in, or adjacent to, major metropolitan centres
- The “Associated Technology Network” (ATN) Universities – with a high commitment to applied technologies
- A grouping that refers to itself as the “New Generation Universities” – essentially universities that were created from former Colleges of Advanced Education and not included in the technology network universities
- Universities located in regional centres
- A group of small private and/or specialised universities.

Information on higher education revenue, according to the segments identified is provided in **Error! Reference source not found.**

The distinctive features of each segment, in terms of product characteristics, market positioning and performance are still in the evolutionary phases. However, the future of the higher education industry will be determined by how well these segments develop to meet demand for research and education services and how delivery is resourced. It will also depend on how each segment identifies and defines that part of the knowledge market in which it chooses to do business as well as the quality, integrity and credibility of the knowledge products and services. These aspects of the higher education industry have required the development of *engagement institutions* to operate at the interface between higher education, industry and society at large.

In the process of industrialisation some traditional not for profit institutions have created private affiliates that target increasing demand for education, particularly business education, on a for profit basis. These entities are generally separate from the core institutional structures, routines and cultures of a research university and represent, in effect, separate institutions of engagement.

In terms of entry of new competitors, there has been strong growth in the private “for profit” sector of the higher education industry in Australia. In 1997 there were 49 private institutions offering 196 accredited courses at diploma, graduate diploma, graduate certificate, graduate diploma, bachelor, masters and doctorate levels. These institutions included Bond University, University of Notre Dame, the Securities Institute, the Royal College of Medical Practitioners, the Mt Eliza Australian Management College, and several theological colleges.

By comparison, in the United States, there were at the same time 669 private, regionally accredited for-profit universities amounting to 15 percent of all institutions, accounting for 2.1 percent of all US enrolments (Ruch 2001). Some for-profits are new, whilst others have been in operation for many years. Strayer University was founded in 1892 in Washington DC and the DeVrey Institutes of Technology were founded in 1931. Although the for-profit model in higher education is not new, what is new is the creation of publicly traded holding companies that own

and run universities in a tradition of “genteel businesses that existed even before the founding of the first American colleges” (Ruch 2001).

The emergence of for-profit institutions has been subject to strong critique, particularly from academics in the arts and humanities. There are some defenders of change. Former academic dean and chief academic officer Richard Ruch, who has worked in eight universities (including Michigan and Harvard) has observed that:

. . . many of the for-profit providers are actually doing a credible and even laudable job of addressing educational needs that are in high demand. That is not to say that these organisations are without faults or that there are not some for-profit education institutions that are substandard in quality and geared more to making profits than to providing education. Just as there is a wide range of quality among traditional, non-profit colleges and universities, there is a range of quality in the non-profit sector. Just as there has been fraud and abuse of public funds in the non-profit sector, there has been fraud and misuse of financial-aid funds in the for-profits (Ruch 2001).

A distinction needs to be drawn between the genuine for-profit universities that are regionally accredited and the “hundreds of diploma mills and fake schools” that sell degrees to any customer who can pay \$3,000 to \$5,000 (Noble 2001).

Competition in higher education is also global in orientation with students able to access courses and programs from a wide range of providers. Already, the main players in the global education market are not seen as the traditional education providers, but engagement institutions taking on a role as *integrators* using technology to combine delivery and distribution of content. Some of these developments are at this stage still controversial. At this stage there is still an emphasis on the opportunities created by the technology as distinct from how the service will actually be provided to the end user – who may be a student or a business that employs students.

Compared with overseas institutions, Australian universities are comparatively small. The University of Melbourne has observed that:

. . . in the longer term, retaining world class staff and maintaining internationally competitive research and teaching infrastructure will require a trebling or quadrupling of the University's current resource base. Only then will the University of Melbourne be resourced on a basis comparable with those of first rank, research-intensive universities in Europe, Japan and North America (IBIS World Pty Ltd 2002).

In 2001 Melbourne University had an enrolment of 35,694. Expansion in enrolments would come from either amalgamations of existing institutions or creating a substantial presence in overseas markets.

Although higher education institutions still rely on the Commonwealth Government a substantial source of funding for the provision of education to undergraduate students they now receive a greater proportion of income from tuition fees paid by overseas undergraduate students and national and overseas postgraduate students. This market for higher education services is international and highly competitive. Demand is sourced from both individual students and corporations.

Apart from tuition fees, universities also receive substantial levels of income from advisory and consultancy services and from research contracts and collaborative arrangements with businesses. This trend also has supply and demand dimensions; on the supply side, science based innovation is a critical aspect of biotechnology and materials technologies and on the demand side, businesses are looking more broadly than their own research laboratories for inventions to incorporate into product development and are moving away from a “not invented here” philosophy. Corporate research is being subject to market testing as part of broader technology acquisition strategies. This market is also global, and expanding, as corporations allow their research and development activities to move away from their headquarter operations and source capability according to where capability resides.

Some argue that this evolution has diluted the core business of teaching and learning, particularly for undergraduates. Many universities in Australia do not formally engage with their local economic and community environment, preferring to retain the traditional disinterested status and associated ivory tower image. The discussion of this Chapter suggests that this may not be a problem for higher education institutions *per se*, but reflective of an absence of effective engagement institutions. Institutions rarely change on their own volition. As discussed, they change in response to external threats and opportunities, but in a way that need not compromise their fundamental purpose and values. Community engagement is generally associated with strong community leadership and vision. This requires the commitment of university administrators, local government and regional business leaders.

The direction of industry evolution in higher education will also be impacted by the investment decisions of both incumbents and new entrants. Incumbents invest to take advantage of new research and teaching possibilities, new forms of delivery which shift entry barriers and the relative power among suppliers and between suppliers and buyers. Evolution depends on a combination of skills, resources, and, in particular, the performance of engagement institutions. These issues will be explored in later Chapters.

Universities as businesses in the production of knowledge

The current perception of the role of the university reflects its place in the socio-political economy. That is, the university is shaped and evolves with its environment. The forces that drive that evolution are complex and frequently misunderstood, with observers and commentators still seeing the institution in very traditional ways. The point is captured by the following comment from a former President of the University of Michigan and Director of the Millennium Project:

The public still thinks of . . . images of students sitting in large classrooms listening to faculty members lecture on subjects such as literature or history. The faculty thinks of Oxbridge, themselves as dons and their students as serious scholars. The federal government sees the university as just another R&D contractor or health provider – a supplicant for the public purse (Duderstadt 2000).

Whilst the observation has an American twist it does also reflect an Australian context. The reality is that a modern research university is a “very complex, international conglomerate of highly diverse businesses” (Duderstadt 2000). They are, in fact, conglomerates managing very large budgets with increasing amounts of discretion. But they are far more complex than most industrial corporations, undertaking many activities - some for profit, some publicly regulated, and some operating in highly contested markets. In addition to teaching and undertaking research, universities provide publishing services (academic presses), health care (through teaching hospitals), collaborate with businesses in research and development, participate in economic development activities (including technology parks and precincts), stimulate social change, and provide sporting facilities and entertainment venues. Universities also have a wide range of investments in commercial property, securities and equities (Duderstadt 2000).

With increasing levels of income from commercial activities a great deal of recent attention has been given to the emergence of what has been termed the “entrepreneurial university” (Gallagher 2000; Slaughter and Leslie 1999). Whether these universities are in fact businesses, however, requires consideration of another set of issues. It is possible to be in the business of knowledge production without actually being in business in a commercial context – that is, to generate a profit. In specific situations and circumstances it is important to understand whether all, or only part, of the activities of a higher education institution are being operated on a commercial basis. To the extent that both types of activities are present the relationship between commercial activities (selling the work of a university for a profit) and core activities (research and teaching) becomes a major issue in overall strategy.

The concept of a university business is not necessarily or exclusively about pursuit of profit. It is about running a university in a *business like* way. It relates to managing large quantities of resources in an efficient and effective manner and ensuring accountability for results (Brown 1996). In being business like it is also important to make a distinction from being commercial, that is, generating profits and returns on investments. This issue points to an emerging duality in the

role of a university, its outputs and how performance is assessed. That is, universities were established and operate primarily as “not for profit” institutions, but a significant proportion of their activities is now directed towards a commercial outcome.

The distinction between a not-for-profit (beneficial) and a business (commercial) activity is important not so much in the process but in the outcome. That is, the purpose of a business is discharged when *customers* purchase products, pay for them and are satisfied. It involves selling a product and/or a service for a profit. In this sense, profit is the test of business viability, not the objective. By contrast, the purpose of a not-for-profit entity, or non government organisation, is discharged in the achievement of change – for example a cured patient in the case of a hospital, a repaired wetland in the case of an environmental agency, or an educated student or new understandings in science and society in the case of a university (Drucker 1990). (The purpose of government is discharged when public programs are judged, or demonstrated, to be effective).⁶

To Drucker, the idea that businesses maximise profit is a major cause of the misunderstanding of profit in society and for the deep-seated hostility towards it as well as being responsible for the worst mistakes of public policy – which are “squarely based on a lack of understanding of the nature, function and purpose of a business enterprise” (Drucker 1993b). This issue is critical to addressing the changing management arrangements in universities. The main business driver in managing private, public and non-government organisations, and a common element to all, is a *plan* and a *budget*. Plans set the overall purpose, define intended results and specify the way in which they will be achieved. Budgets define how resources are to be sourced and applied. CEO performance is judged by their ability to deliver on plans and meet budget parameters.

In universities run along business lines, with revenues and expenditures running into hundreds of millions of dollars, plans and budgets are the key performance drivers. From this it follows that university managers must know about their costs, their commitments and the totality of their financial affairs and how they relate to business strategy.⁷ This is not the same thing as a relentless pursuit of “profit”.

To create a business requires the investment of resources in management, marketing and working capital. Only a few universities have been prepared to make this commitment in relation to knowledge products, preferring instead to simply create a property right in discoveries and inventions and grant non-exclusive licenses for use. A small number of universities have resourced technology transfer companies to secure intellectual property rights and, in addition, actively market those rights to businesses and engage with the financial sector in the formation of companies to produce products based on those technologies in the form of start-up companies. Some universities have established their own venture funds for this purpose. In addition, numerous agents, consultants and brokers have emerged that seek to undertake the commercialisation activity on behalf of the university.

One of the most difficult issues in the marketing of knowledge products is determining the exchange value. The extraordinarily high valuations of dotcom companies at the height of the technology boom was an indication of the difficulties and uncertainties surrounding the valuation of knowledge products. Many of the products were in fact simply ideas or concepts that had little or no prospect of ever delivering revenues that exceeded the costs of production (the business validity test). The collapse of the technology boom in early 2000 indicated in sharp reality that, notwithstanding the ability to create pure knowledge products through the application of knowledge on knowledge, the capacity to derive a return relies heavily on the existence of complementary assets in marketing (including brands), production, distribution channels and management capacity.

For many knowledge products the exchange value is close to zero as a practical application has not been determined, reduction to practice research and development has not been undertaken,

⁶ This distinction is discussed by Peter Drucker in a number of works. He argues that the practice of management differs little across institutions in that its primary function is to achieve the results of an organisation. See (Drucker 1990, 1999).

⁷ It is of interest that recent significant CEO appointments have come from a finance background – BHP and the ABC are prominent examples.

or a customer profile created. Moreover, exchange value is generally quite unrelated to the cost of discovery or invention. For most businesses, value is created through marketing – by making existing and potential customers aware, and convinced, of the attributes of a product and the way in which it will deliver value *to them*. The value related to the scientific or technical aspects of a product will be heavily discounted due to the costs and the risks of getting to that end position.

Peter Drucker has argued consistently over many years that only an organisation that fulfils itself through marketing a product or a service is a business. He adds that the primary purpose of a business is to create a customer and this is achieved through the dual functions of marketing and innovation (Drucker 1988). An organisation in which marketing is either absent or incidental is not a business and should not be run as if it were one. It is the presence or absence of a marketing function that sets a business apart from other institutions and forms of human organisation. Specifically, the church, the state, and the university (in its traditional formulation) have not generally been involved in marketing a product or service.⁸ These institutions have stood back from the market and commercial world to provide stability, certainty and a supporting ideology for the conduct of trade, enterprise and social interaction.

In a business environment *customers* determine what a business is by being willing to pay for a product or a service. Businesses adapt and respond to customer wants. Thus a citizen is not a customer of the state or a parishioner a customer of the church, a prisoner a customer of a gaol, or a student or scientist a customer of a university.⁹ Historically, universities have been organised as communities – as reflected in references to the “academic community” and the “community of science”. But these relationships are undergoing change. As the university becomes involved in commercial activities (that is seeking to sell its outputs for a profit) customer relationships become established and a business emerges. The scale and scope of that business in the overall institutional structure and the way in which it relates to it is an important issue for consideration.

Through experience both church and state, when involved in commercial operations and activities, have sought to separate the business and marketing functions from their integrating and regulatory functions. The way in which universities are resolving the balance between providing their core functions of teaching and research objectively and autonomously, with the commercial pressure to satisfy customers, is still evolving. Practices adopted in general government can be instructive in this regard. The instrument of the statutory authority for example, was created to separate commercial and trading operations from the functions of the state. More recently, the Australian Government has used the device of an *Executive Agency* to create a degree of independence from departmental management and facilitate a higher level of engagement with business, industry and other key constituencies.

Although universities are now charging directly for a range of products services, it does not necessarily mean they are businesses. The issue is whether they are actively *marketing* those services, the way in which they are being marketed and the extent of involvement of a “customer” in the design and delivery of those services. If universities merely assert property rights in discoveries and inventions and are not involved in marketing the asset created by this process, they are not really involved in a business. This is the preferred course of action for many research universities and is reflected in the very low level of resource commitment allocated to technology transfer offices. Standing back from the market avoids the risk of conflicts of interest over the direction of research and scholarly inquiry. Moreover, research shows that very few universities have ever been successful in this sort of business (Johnston, *et al.* 2003).

It should not follow, however, that a person or organisation who pays for courses, or for research, directs the way the teaching is provided or research is undertaken – any more than a patient (not a customer) instructs a physician or a surgeon or a litigator tells a barrister about how to undertake their work. This is the nature of professional services in the knowledge economy and knowledge society. Fees are paid for process, not outcomes; in many professions, payment on

⁸ There are exceptions. The Catholic Church was in the business of selling “soul indulgences” prior to the Reformation.

⁹ There have been some interesting learning experiences – such as the Australian Taxation Office once referring to taxpayers as customers.

the basis of outcomes (success) or commission is regarded as unprofessional and in breach of ethical standards. But fee for service does demand accountability, professional integrity, and ways to identify, assess and rank quality, and mechanisms to obtain redress for poor performance and conflicts of interest.¹⁰ It also requires that teaching and research is not only excellent – it has to be relevant to end user needs.

One of the few areas where universities have been active in marketing is in the area of business education. The representations by universities and business schools of career advancement associated with completion of a MBA qualification have been brought into question (Crainer and Dearlove 1998). Business schools now have to take greater cognisance of the needs of students as customers who want a qualification that *will* provide opportunities for career advancement. To this end there is now a great deal of information, and rating systems, that publish information about the performance of business schools relating to the success of their graduates.¹¹

Global professional services firm PricewaterhouseCoopers, a major employer of university graduates has argued that an important consideration for universities, especially in light of the drive for deregulation of fees, will be how they manage the increased expectations of the customer. The firm suggests that this is not something universities have had to worry much about in the past. Processes to deal with marketing, business development, and managing customer satisfaction are all areas where universities need to adjust their services to meet the changing requirements of students, business, and the wider community. The firm notes:

More collaborative approaches to learning are required, providing knowledge and skills to students when and where they need them. Greater competition in the higher education sector and a shrinking market place will place pressure on universities to become more customer-focused in their design and delivery of education services (PricewaterhouseCoopers 2002).

To perform in this context higher education institutions will have to give attention to the way in which they engage with organisations such as PricewaterhouseCoopers. They will need to commit to the generation of disciplinary knowledge, which lies at the basis of their legitimacy as higher education institutions, whilst at the same time responding to a customer demand for vocationally oriented teaching. Engagement may evolve along the lines of specialised teaching institutes and schools that stand at the interface between core institutional values and the demands of the marketplace.

Such institutes can only be successful if they have available a core of disciplinary knowledge that is created in an objective, credible and autonomous environment (academic excellence) but at the same time are capable of applying that knowledge to business and industrial situations (business and industrial relevance). In the research arena, the balance between research excellence and research relevance has been one of the major challenges for ensuring success in Cooperative Research Centres (Howard 2003b).

There has been a great deal of concern expressed in situations where businesses become customers in relation to research services, particularly in the pharmaceuticals sector (Bok 2003). The business purpose of satisfied customers (for example, a favourable outcome of a clinical trial) has the potential to undermine academic credibility and institutional values if research is biased. As argued above, resolution of this dilemma requires strong and effective engagement institutions that protect the values of higher education institutions and meet the needs of industry. This may involve the creation of ethics and probity organisations to develop standards (rules) and advocate

¹⁰ The failure of the auditing and accounting profession to adhere to professional standards in relation to recent corporate collapses is an indication of conflicts of interest between managers and shareholders. The situation was driven in large part by excessive discounting of audit fees and boards making decisions on price alone, encouraging auditors to leverage their consulting colleagues into the businesses. Notwithstanding “Chinese walls” within the accounting firms, auditors and consultants shared profits and “cross selling” was a major criterion in performance appraisal. It is likely that the profession will lose its capacity for self-regulation.

¹¹ *Business Week* publishes an annual survey of business school performance and provides a substantial amount of information on its on-line website.

their implementation. These standards and rules should form basic guidance for institutions of engagement.

Engagement institutions allow for the separation of the interests of business and the maintenance of academic integrity and values. University research offices currently perform this role but they are generally poorly resourced and do not have the capacity for monitoring and delivery of sanctions. There is a case for separate and independent engagement institutions for managing the interface between the requirements of business for commercial outcomes of research and the need to preserve and maintain academic standards and values of higher education and research institutions.

These institutions require robust structures in order to operate effectively in knowledge markets and professional, expert management in joint ventures, alliance and partnership arrangements. It is at the interface that business is conducted: this does not necessitate or imply that higher education institutions lose sight of and commitment to basic institutional purpose.

Summary

The demand and the resources available for “disinterested” scholarly activity with no apparent application are not endless; there comes a time when priorities and frameworks have to be set and decisions about the allocation of resources made. This is a process that is currently underway. The increase in demand for student places, and the cost of research, has placed enormous financial pressure on universities. Governments are not inclined to meet the full cost of this commitment by either increasing taxes or extending public borrowing. Accordingly, this requires a greater focus on commercial issues and, as suggested above, managing to the discipline of a plan and budget. This is being business-like.

These observations provide an important base for thinking about universities in business terms. That is, successful university “businesses” will not achieve success and sustainability by a relentless pursuit of profit. They will do so by focusing on the needs and interests of their constituency – students, government, businesses and the broader community – and commit to a process of innovation in meeting those needs and requirements. However, many universities have come to realise that without some form of customer focus in a highly competitive industrial environment, they will cease to exist as sustainable organisations.

Universities are not the same as industrial corporations. They have different institutional characteristics in terms of structure, routines and cultures. The criteria for assessing performance are also different. There are numerous reasons why universities should not be directly involved in the knowledge business. These relate to threats to fundamental institutional purpose and integrity. However, it is essential that there be effective forms of engagement between universities and businesses as a way of achieving mutually beneficial outcomes, particularly in the area of mode 2 knowledge creation.

For higher education institutions to survive and grow as knowledge producing institutions they must maintain and build on their unique institutional purpose. This provides a basis for creating effective forms of engagement with business and government that are grounded in institutional strengths. The benefits to the economy and society of mode 2 knowledge creation will be achieved through the processes of engagement rather than attempting to imitate the institutional characteristics of a commercially oriented business enterprise.

Engagement occurs through collaboration in both teaching and research. Collaboration when structured as a partnership, alliance or joint venture, is a managed relationship requiring the input of experienced and competent joint venture managers who are capable of acting in the interests of all parties. Management skills in this area are in short supply. Engagement through commercialisation as in the sale of knowledge products and services (such as academic publications, technology licensing and full fee paying courses) also requires the skills, capabilities and commitment of market intermediaries. The capacity to build expertise, trust and maintain integrity in these exchange based relationships is a major challenge.

The development and implementation of strategies for collaborative and exchange based relationships are likely to have profound effects and impacts for the future development and structure of the higher education industry. It is clear from the analysis of performance to date that not all universities have the capacity to be heavily engaged in research commercialisation or to generate substantial income from overseas students.

Draft for discussion