

Embracing the Future: Innovation and Higher Education

National University Finance and Procurement Conference,
Sydney, August 2013

The slogan for this conference staged by Universities Australia's services subsidiary, Higher Ed Services, is appealing in its boldness. It is a call for "Embracing the Future", and pursuing "transformational change in higher education".

This prompts the question of whether we are really ready and equipped to rise to this challenge. Will higher education succeed where other industry sectors have failed? Here I will simply explore the odds without delivering a verdict.

Like a good sermon, I will begin with not one but two texts: the wise words of others which might resonate even if my own words do not. The first text is a useful antidote against delusional self-belief, and comes from Mark Twain:

"it ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so".

My second text, eerily prescient, comes from the much quoted but seldom read master of the Scottish Enlightenment, Adam Smith. In *The Wealth of Nations* (1776) he writes at length about educational policy and practice. One paragraph, in particular, caught my attention as embodying some age-old truths about the nature and sources of innovation:

In general, the richest and best endowed universities have been the slowest in adopting ... improvements, and the most averse to permit any considerable change in the established plan of education. Those improvements were more easily introduced into some of the poorer universities, in which the teachers, depending upon their reputation for the greater part of their subsistence, were obliged to pay more attention to the current opinions of the world.

I suspect, although I would be happy to be disproved, that much needed innovation in our education sector will come, not from the present elite institutions, but from the hungry second tier of more market-attuned institutions with more to prove and gain, and from new, private sector entrants.

Our perspectives on innovation in this sector will be shaped inevitably by our varying experiences or engagements with higher education.

Given my own background in telecommunications and the ICT sector it is no accident that my interest in the education sector grew out of my work on the emerging Internet phenomenon in the early 1990s. In particular, my 1994 study, *Commerce in Content*, suggested that digital forces would reshape all traditional content businesses, and this has proved to be the case. In addition, I have held various governance roles in higher education, both in Australia but also in Asia and Latin America. This latter experience has proved invaluable in providing contrasting perspectives on the challenges facing the sector, and the potential opportunities for innovation and beneficial reform. Most recently I have become involved with a private VET college moving to become a specialised higher education provider, pioneering the professionalisation of personal services (a most neglected and poorly understood sector of the economy).

I may be wrong, but I wonder whether we have fully accepted and articulated the significant sectoral pressures for structural change and innovation. It is not difficult to identify immediate pressures for change.

First, the sector's unsustainable cost structures. The growing burden of student debt is causing many in the US and the UK to question the economic viability of pursuing higher

learning; the personal return on investment may now often be negative as participation rates rise dramatically and a larger pool of graduates compete for places in labour markets. On the other side of the equation, the university sector is characterised by very high overheads relative to other service industries, exacerbated by the regulatory sclerosis which bedevils the sector. The embedded cross-subsidies which support research ambitions in the sector, or the differential pricing of international and domestic student places, undermine transparency and will be unsustainable in more contested marketplaces of the future.

Second, the sector's revenue models appear to be becoming increasingly shaky. Income streams from foreign students face inexorable attrition as the primary source markets themselves invest heavily in higher education and operate with all the focus and agility of greenfield enterprises. The overall revenue base and mix is narrowing as government funding reduces and industry sponsorship diminishes (although company student sponsorships remain a strong feature of the sector in Asia). Competing business models, including MOOCs, look set to steadily siphon off specific service functions or erode the market shares of incumbent providers.

Third, the capital structures of most universities would scarcely appeal to market investors (except perhaps for "vulture capitalists" identifying underutilised capital assets). I sometimes wonder whether elevation to the peerage of Vice-Chancellorship turns erstwhile academic managers into property development magnates given the vast real estate portfolios of contemporary universities. A cautionary tale from my days in telecommunications is how erstwhile towering exchange buildings emptied as functionality shifted to computerised operations. (That shrinkage has, of course, now been reversed – albeit at different sites – as the ICT sector has had to invest in vast data server farms to store the exponential growth of raw data and information everyone wants to collect, exacerbated by the data hoarding proclivities of State surveillance agencies). Will "flipped learning" and haptic simulation now leave university lecture theatres and many clinical laboratories obsolete? How many ageing campus buildings will remain fit for purpose in the 21st Century?

The sector's capital investment in real estate and specialist facilities is huge, but mainstream financial analysts would be shocked at the low utilisation levels (and hence lazy returns on this investment). Facilities are empty and unused for significant periods of time. The problem with the asset management model is compounded by the habit of governments to fund or subsidise initial capital investments without regard to ongoing operational costs or adequate depreciation provisions. The case study of the Victorian Synchrotron is salutary.

Finally, demand patterns continue to change. The government has set stretch targets for participation levels to reach 40% of the demographic cohort of the population, whilst failing to produce an overall framework for what we used to call "post-secondary" education and the role within such a framework for the VET sector, polytechnics, and community colleges. This lack of a robust "portfolio" model of post-secondary educational provision is a policy failure and results in unbalanced stresses across the system and poorly developed articulation pathways for students.

The "megatrends" affecting sector demand revolve around the globalisation of educational markets (with technology based offerings at the forefront) and the elephant in the room, which is ageing populations, extended working lives with postponed retirement, and increasingly rapid skill obsolescence, all of which combine to create demand, as yet little addressed, for continuous life-long learning. Both universities and governments have been slow to address this market vacuum and how we might best develop "life long learning accounts" – and accounting.

There are, moreover, other groundshifts which undermine the *status quo*, and its sustainability and that create an innovation imperative. One is the all-pervasive digital revolution, to which we will return. Before doing so, however, it is worthwhile examining what is happening around two of the core and distinctive assets in the university business

model, aside from privileged land grants. These are the core assets of faculty, and statutory accreditation rights.

Tenured university faculty were once largely tied, and subservient, to individual universities in much the same way as actors and actresses were bound to film studios in Hollywood (this was, of course, after universities ceased to be autonomously and collegially self-governed). The talent associated with the university created the institutional brand. It still does, but the balance of power has shifted, as it has in most areas of entertainment and sport. Now “stars” can call the shots, establishing personal global brands, and becoming highly mobile. Postgraduate students and sessional staff become the institution-tied vassals performing the actual teaching tasks, however ill-equipped. Under current operating models, this is probably the inevitable corollary to the democratisation of higher education and its increasing globalisation.

The most valuable asset of a university, however, is its privileged and exclusive right to confer degrees and their role in professional accreditation. From critics of medieval craft guilds through to Adam Smith, political economists have noted how monopolistic “licences to operate” create exclusionary cartels which are antithetical to notions of free trade and open markets. Vested and incumbent interests continue to limit open and robust discussion of the public policy tensions between monopoly rights and competition policy and market contestability (as they also do in the arena of intellectual property rights). In analogous areas, like the regulation of gambling or the licensing of “free-to-air” broadcasting, restrictions have been progressively eroded by technology. They remain, however, in tightly controlled professional domains like medicine and law, where restrictions on trade and workforce restructuring are exercised by professional charter associations rather than universities *per se*, although pre-qualification for professional accreditation has been largely outsourced to universities.

The question now is whether renewed attention to competition policy will lower barriers of access to accreditation rights (comparable to what has happened with taxi licence plates), or whether reform will follow from a new round of global trade negotiations focussed on liberalising the trade in services and reducing non-tariff barriers. In my view it is not a question of whether this will happen, but when. I hope this is sooner than later, because regulatory protections tend to promote strategic laziness, compounded by the sclerosis arising from the concomitant compliance regimes – the price of regulatory privilege – and which breed risk aversion, entrepreneurial timidity, and which insulate institutions from exposure to market disciplines.

How will or can the higher education sector respond to these pressures and challenges and, indeed, embrace transformational change?

Established institutions generally face the “boiling frog” syndrome, neglecting the slow build up of evidence that change is not only necessary, but eventually life preserving. By the time many institutions or firms wake up to the need for change it is too late. Ask the auto industry, or the manufacturers of photographic film, to name but two examples. That is the story about missed opportunities for innovation.

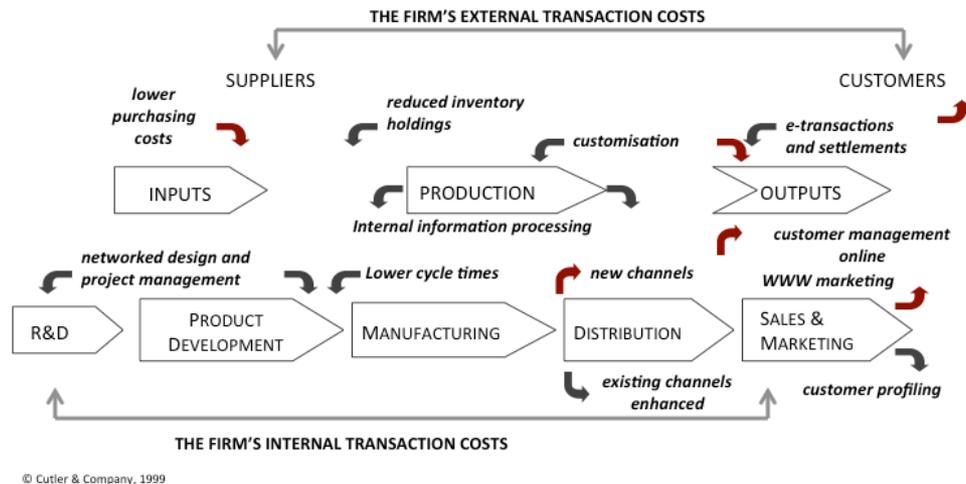
Long established institutions and industries acquire a lot of baggage over time. Familiar metaphors are barnacles on the hulls of boats, or weeds choking a garden. Clearing away the undergrowth can restore a clarity of purpose and focus. For long established institutions, innovation is often about this sort of renewal. The focus of a lot of the popular discussion about innovation is on “start-up” innovation. This overshadows the role innovation plays across the entire lifecycle of firms, institutions or even industries. This “whole of life” perspective on innovation is well documented in Geoffrey Moore’s book, *Dealing with*

*Darwin*¹. It is recommended reading for people, firms and even universities who might have become set in their ways. None is ever too old to innovate, and evolve.

It is, however, hard for entrenched incumbents to change, which is why a great deal of the innovation comes from the edges of industry and from agile new entrants with nothing to lose but much to gain. If we substitute the word “change” for innovation we might be more aware that innovation is seldom the source of that warm inner glow we invoke when carelessly throw around words like “creativity”. Innovation-as-change can be tough and not for the fainthearted, because there are winners and losers. Nonetheless, past success is no guarantee for the future, so innovate we must.

Arguably one of the biggest changes in our lifetime is everything associated with the digital revolution. Australia’s last sustained productivity boom was from the early 1990s until about 2004. Subsequent analysis² reveals that the bulk of aggregate national productivity growth over this period came from a few, but large, service industries. (Interestingly, the productivity patterns in the US are remarkably similar). In each case the productivity drivers appear to be the entry into the workforce of a new generation of technology literate people, and, most importantly, the business model and business process redesign enabled by the deployment of new information and communication technology platforms. Digitalisation across the business functions of the firm changes the economics and productivity of both internal functions and external market transactions. I started to map these developments in the late 1990s. Whilst the following schematic could usefully be updated today with more florid digital terminology, the basic message would remain unchanged.

Locating innovation and productivity within patterns of market transaction – the opportunity for business model re-design



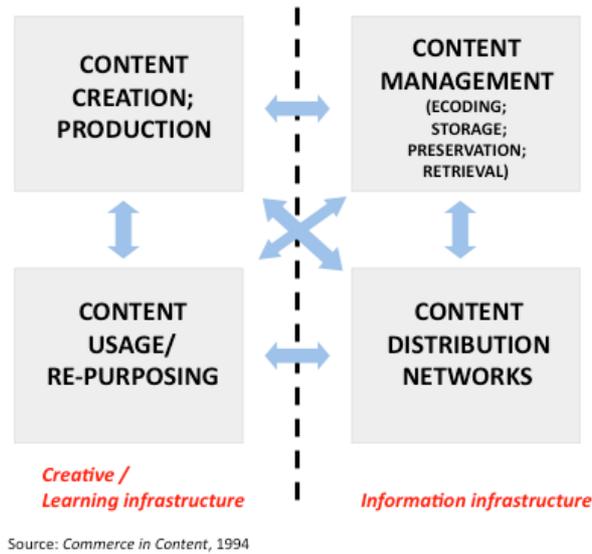
The digital revolution changes the way we do business. Nowhere does this hold more true than in content businesses and what we now call “creative industries”.

Education, as a quintessential content business, becomes a digital content business. Thus it behoves everyone associated with higher education to rethink the business models for this new era. A simple model for describing content business functions which I developed in 1994 continues to be helpful as a basis for analysing the linkages and interdependencies within content industries. It is also useful for mapping the relevant tools and technology

¹ Geoffrey Moore, *Dealing with Darwin: How great companies innovate at every phase of their evolution*, Penguin, NY, 2006

² Alan Hughes and Vadim Grinevich, *The Contribution of Services and Other Sectors to Australian Productivity Growth 1980-2004*, ABF Sydney 2007

platforms in a digital environment. Any university today without a comprehensive, strategic ICT architecture encompassing the elements in this model will be ill-equipped to face emerging challenges and respond to the opportunities for sector innovation.



As indicated earlier, new and open communication channels enable faculty members – and now others – to capture the value of their content production (rather than it being held by the university). In an open market for content and pedagogy, an individual’s brand and reputation become all important, underpinned by new channels such as blogs or specialist online media like the university-supported channel, *The Conversation*³. Virtual distribution channels enable global reach. Amongst other things, digital architectures enable things not previously possible, like online social learning and new data and learning analytics and diagnostic tools.

The great sector debate of the day revolves around MOOCs – massive, open online courses, recently described as the “final frontier” for higher education⁴. Robert Gottlieb, the respected business commentator, recently discussed the impact of online media on traditional newspapers. He noted that, for example, Fairfax had failed to capture the online channels for car, real estate and job advertisements and coined the term “being Fairfaxed” as a salutary warning for all content businesses. Listening to some university administrators today reminds me of my experience in conducting a multi-client study into the emerging online economy in 1995. Working with some of the world’s leading ICT companies, I was shocked that most then described the Internet as a blind alley! Evidence of the cost of such failures to identify and respond to sector change now abounds, and provides a salutary lesson for the higher education sector.

Much of the debate around MOOCs remains fairly banal – with different people taking fairly binary positions. The terms of the debate remind me of the discussions in the 1970s about telecommunications travel substitution. Of course this never eventuated, and both communications and travel grew synergistically. The challenge now is to think about the optimal architectures that synergistically combine the physical, the place based, and the virtual. My own thinking about this challenge is being shaped by being involved in shaping a brand new higher education college. The thought experiment for us all is how, if one were starting from scratch, would one design a higher education institution for the 21st century.

A good starting point is to go back to the core business of universities – education – and to examine what the community, and industry in particular, actually values about the

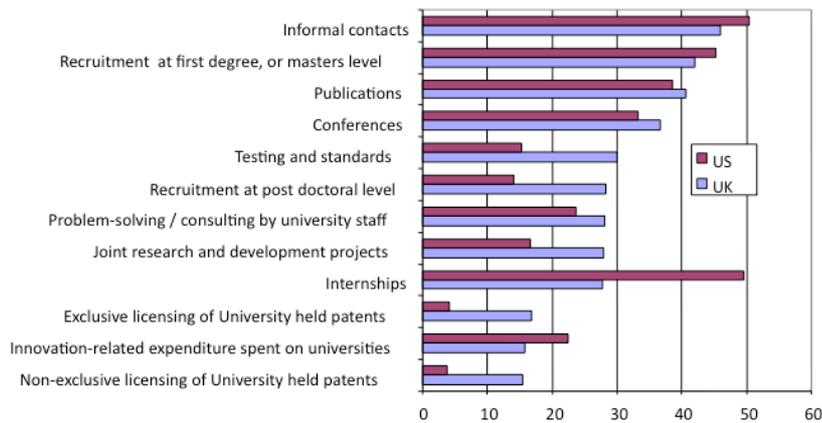
³ Disclosure: the author is a Director of The Conversation Ltd.

⁴ Sara de Freitas, *MOOCs: The Final Frontier for Higher Education*, Coventry University, July 2013

university. And how might we use new combinations of online services and physical campus to maximise student outcomes and community expectations?

To survive periods of rapid structural change, organisations need to focus strongly on redefining themselves around their markets and customers. Successful innovation is always market facing. In higher education, however, there seems to be a major, potentially fatal, disconnect what industry and the community values from universities, and public policy and funding priorities and incentive structures. Over recent years Alan Hughes from Cambridge and Richard Lester from MIT have joined forces to address the question of what industry looks for in interactions with the higher education sector. The answers are instructive:

**How should the university value proposition for stakeholders shape business models?
Types of University-Industry Interaction Contributing to Innovation (% Companies)**

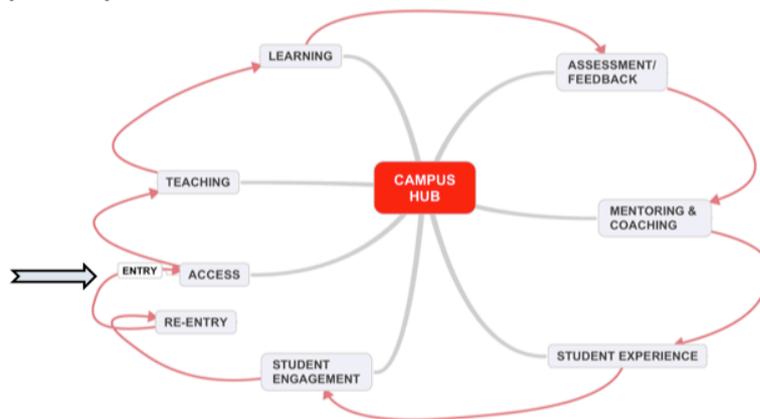


Source: A. Cosh, A. Hughes and R. Lester UK PLC *Just How Innovative Are We?* Cambridge MIT Institute 2005

In summary, what is valued are well-educated graduates (“knowledge moves on two legs”), public spaces for information and social networking, access to pools of useful knowledge, and problem-solving services. Many of these services are now enhanced or best supported by online platforms.

In my work with a higher education start-up, we have focused on trying to be totally student-centric, shaping the physical campus hub and the supporting online ecosystem around student pathways and a “whole of life” model of learner engagement. Social networks will support the learning community.

Functions within an Educational Operating Model - student pathways and articulation



While everyone is talking about MOOCs, there is a need for a better parallel discussion about reinventing the campus for the 21st century.

Re-envisioning the physical environment for higher education must have regard to emerging global trends. Cross-border innovation and R&D flows are transforming national innovation systems, and correlate with increased faculty and student mobility, and competition between natural activity hubs. Locational functions around R&D and innovation are affected by changing industry demand and investment models. There is an increased focus on access to *clusters* of skills and capabilities for combinatorial innovation (or what can be described as design led systems integration), access to special purpose locationally based assets (either facilities, or end user populations - both natural or human - in the case of research), cross-disciplinary competencies and rapid prototyping experimental environments. These requirements seem likely to always call for some form of physical hub, even if such capabilities can be scaled into virtual environments. Most importantly, however, humans are social beings, thriving on social networks - with the concomitant generation of social capital.

Recent discussions around innovation precincts provide a good starting point for thinking about the campus hub of the future. By precincts we are talking about place-based ecosystems. Instead of standalone institutional and faculty silos, we need to start looking at multi-party sites of practice. CSIRO has been at the forefront of initiatives to focus its locational activities around natural hubs of regional activity: co-locating, co-investing and collaborating with innovation partners which include universities, government agencies, and industry partners and end users. The CSIRO strategy is about using a precinct model to achieve global scale and impact. Natural precinct hubs have been identified in Perth around resource sciences, in Melbourne around material sciences and life sciences, or Brisbane around environmental sciences. Some of such centres identify themselves because they are sited around the object of research and teaching, like mining, tropical medicine, or marine sciences. The challenge of translating a campus into a precinct is largely one of cultural change and requires the removal of institutional barriers to collaboration across any value chain. Precincts are energised by physical social and information networks and networking, reinforced by online media.

My argument has been that the current business models of universities appear unsustainable. Neither the education nor health sectors have realised the productivity gains achieved in other service industries. This challenge is compounded by the reality that all content businesses are facing radical change in a global digital era. The challenge is clear: adapt, or make way for others. Pursuing transformational change in higher education will revolve around an ever-evolving mix of placed based activity and virtual, online connections.