After Copernicus: Beyond the crisis in Australian universities

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There’s a received view of the troubles of academia which lays the blame on a new corporate culture of soulless managerialism. Geoff Sharrock isn’t convinced. He argues that critical scholars are often ill-placed to be able to understand their own predicament. And many of the problems of the sector lie in its incapacity to adjust to the changed world of knowledge-creation in which we live.

The uncertain rise of intellectual freedom

Observing the night sky from a cathedral turret, Copernicus deduced that despite common perception and expert opinion, the universe did not revolve around the Earth after all. In an age when a radical thinker might publish and perish, this view was first circulated privately in 1514. The full work appeared in 1543, the year of his death.¹

For many in the church, On the Revolutions of the Heavenly Spheres was too revolutionary. As a bit player in a wider universe, a post-Copernican world implied unthinkable things. One outspoken follower, Giordano Bruno, was burned at the stake in 1600 for arguing that other solar systems might be inhabited by rational, even superior beings. Goethe observed two centuries later that of all discoveries, this was the hardest for society to accept:

Mankind was asked to waive the tremendous privilege of being the centre of the universe…and by this admission so many things vanished in mist and smoke!

Almost a century after Copernicus’ death, Galileo found how unshakable a shared framework of belief can be, once embedded in a society’s culture and institutions. In 1610 he had won status, tenure and double his salary at the University of Padua for introducing the telescope and highlighting its military and commercial uses to the Venetian authorities. He turned to astronomy and began to dispute the church authorities’ pre-Copernican dogma. In 1633 a provocative manuscript got past the Censor, went into print and caused offence. Galileo was tried and punished for teaching Copernican theory as a Truth, not a hypothesis, and his sentence was proclaimed in every university.²

For Western scholars today the lessons seem obvious. Intellectual freedom is essential to the pursuit of truth, the advance of knowledge and the well-being of civilised societies. Academia must be allowed its ‘license to kill’ what passes for common knowledge, and scholars their right to ‘speak truth to power’ with impunity.

It took time to enshrine these principles. In a Prussian reprise of Galileo’s experience in Rome, the philosopher Kant was rebuked in 1794 for publishing unorthodox views on theology. In response he developed an argument for a limited form of academic freedom, framed as an essential function of a university.³ Members of his own ‘Lower’ Faculty of Philosophy (today’s Arts and Sciences) must be free to publicly challenge the teachings of other Faculties, despite these being legislated by the government. But the ‘Upper’ Faculties of Theology, Law and Medicine certified graduates to administer public services.
Their professors must therefore confine such debates to the scholarly community ‘since unlimited freedom to proclaim any sort of opinion publicly is bound to be dangerous’.

Or as Q says to 007, ‘You have a license to kill, but not to disobey the traffic regulations’. For Kant, the government had the right to ensure that universities taught only accepted doctrine to students in the learned professions, based on expert advice from the upper Faculties. Once in office, professionals must follow approved practice since as Kant put it, ‘innovators might be dangerous’. But the government also had an interest in scientific progress. Kant argued that this progress was aided by a ‘conflict of the faculties’ within the university. If those in Philosophy compelled the Upper Faculties to justify their teachings by evidence and reason alone, in time the professional disciplines would be perfected as science and doctrine converged. Kant concluded that in time the Lower Faculty might thus become the ‘higher’ as a source of expert advice to government.

This dual stance towards knowledge – a body of lore to be preserved and a set of problems to be solved – led to a structural innovation by Humboldt in Berlin in 1809. He proposed that teaching and research, once the work of separate bodies, should be combined to produce what we management consultants call synergies and economies of scope:

Usually one means by higher institutions of learning the universities and the academies of the sciences and of the arts…the question (is) whether it is today still worth the trouble to found or maintain an academy side by side with a university. And what sphere each of them, as well as both together, should occupy if each is to be activated to its greatest possible degree. If one limits the university to instruction in and communication of learning, and the academy to research, one obviously does the university an injustice…one could surely dispense with the academies and entrust research to the universities, provided they are properly organized toward this end…

Writing on business innovation in 1994, Drucker remarked that Humboldt introduced a new ‘theory of the business’ for universities. It succeeded to the extent that in Western economies today, intellectual freedom and the teaching-research nexus are accepted as defining features of a university.

The modern university in crisis?

But as Drucker observed of US business enterprises, even outstanding innovations don’t guarantee success forever. Once institutionalised they can contribute directly to future failure. Successful companies fall into crisis when the ‘theory of the business’ on which they were built no longer matches reality:

Drucker described how the very success of large-scale enterprises buffers their inhabitants from the impact of significant change – until the external context shifts enough to compel a rethink. Without constant reappraisal of the outside world, members of the organisation become so steeped in their own way of doing things that they lose sight of its limitations:

as it becomes successful, an organization tends increasingly to take its theory for granted, becoming less and less conscious of it…It remembers the answers but has forgotten the questions. The theory of the business becomes ‘culture’. But culture is no substitute for discipline…

Today the modern university’s ‘theory of the business’ is in flux. But the causes are not easy to diagnose. From the outside, decades of growth in student numbers, course offerings, research programs and new disciplinary formations attest to the success of the sector. And in a global knowledge economy, societies value education and science highly. Yet many scholars sense a decline in the academic enterprise – even a crisis – and warn that academic values and purposes are once more at risk.

Ideological explanations

The problem is not that the church or government control what scholars teach or publish. Instead, many commentators point to a wider shift in societal values and political ideologies, toward commercialisation and corporatism. Academic values and collegial-democratic practices have given way to business values and managerial practices. As Currie put it in 2004:

A number of commentators in Australia, the United States and Canada observed this shift of power from academic departments to central administration…accompanied by a new kind of fundamentalism suggesting that managers have all the answers and that answers to managerial issues are to be found in imitating business practices. Corporate managerialism assumes that managers should make the most important decisions and make them quickly, leading to restructured institutions…

Saunders’ concluded more bluntly in 2006 that:

The values that…academics used to have…being replaced by those that people in business have always had…If their university slavishly follows the market…so must they…

In sum, too many people now see the university as a commercial enterprise selling commodities to consumers in the marketplace, rather than a scholarly community pursuing truth and knowledge for the public good.

This is a plausible critique. It has currency in parts of Australian academia – perhaps more so in the humanities and social sciences, and among those old enough to recall academic life in the funded expansion of the 1970s. It argues for greater independence for scholarly communities, not just from church and state but from the market too. And given the lessons of
history, who would argue against greater independence? But the critique has its problems. Few would oppose touchstone concepts such as ‘collegiality’, ‘democracy’ and ‘academic freedom’ in the abstract. Yet in practice these ideas can be used as alibis to prop up outdated norms and untenable assumptions.

In a time of fully-funded expansion, for example, an academic department can sustain the idea that intellectual freedom and democratic values imply a work culture of *laissez faire* independence. Here everyone does their own thing, budgets and resources are fixed in advanced, change occurs only at the margins and collegial consent is a feasible norm. But with the shift to programs and budgets that rely on a mix of public funding, student fees and earned income, the stakes are higher. There is a larger risk that departmental finances will not balance, workload disparities will accumulate, standards will drop due to work intensity, and resentments will arise among staff. In this situation it is harder to reach decisions without any painful trade-offs, or any pressure on individuals to shift their positions. The norm of collegial consent becomes a recipe for stalemate.

Second, historically there is evidence that the ‘corporate’ aspect of complex institutions necessarily looms larger in times of reform. Given its scope to create winners and losers, significant reform requires centralised effort. A process of regime change may well disrupt the normative order and threaten a community’s sense of identity and integrity. The issue is whether it is core values and purposes that are at risk, or just customary habits and assumptions. Adaptive change will look like progress for some and decline for others at the same time.

The history of universities is illustrative. The rationale for Humboldt’s reforms in the early 19th century may seem clear and sensible today, but at the time they were not automatically embraced by scholarly communities. What Humboldt found disputing about the task of reform was the way it exposed him to distorted perspectives and partisan lobbying. Then there is the collateral damage of *laissez faire* independence when reforms are urgently needed, but fail to occur. In 1852 Newman observed that throughout the 18th century Oxford ‘was giving no education at all to the youth committed to its keeping’; and that no remedial action took place until the start of the 19th century when ‘the academical corporation’ pushed for change persistently enough to win consent from the collegiate bodies. Intent on promoting the virtue of self-directed reform, Newman does not dwell on the implications of its glacial pace for generations of students. When left to its own devices and desires, a scholarly community can turn inward and fail the society whose interests it supposedly serves.

Third, some recent critiques of ‘business values’ in Australian academia conjure up vast constituencies of like-minded scholars, all outraged at the commercialism and managerialism of senior administrators. As an institutional outsider I have come to suspect a selective use of evidence here, if not a talent for ventriloquism. In 2005 I was able to test this by engaging more than a dozen focus groups in an actual university community in dialogue about what policies and strategies their institution should adopt. I used an interactive survey tool10 to allow each group to map its responses to the institution’s outlook and priorities. After rating a series of propositions about possible policies and strategies, each group’s data was immediately played back to prompt a differential diagnosis of issues and proposals. In the event, no chorus of disapproval emerged from academics in one corner; and no corporate-managerial compost flowed from administrators in another. Whatever its constituency, every group offered a spectrum of views on most questions. This process was part of a wider consultation that featured dozens of written submissions from departments and individuals. As the summary report11 to the University’s Council shows, a broadly shared set of aims and values did emerge across the institution. What didn’t emerge was any agreement on the policy or strategy trade-offs needed to realise them.

For these reasons I don’t share the ‘knaves and fools’ diagnosis of what’s wrong with Australian universities. The implied solution is that, afflicted as they are with ‘business values’, authority-figures in universities should be somehow reprogrammed or simply replaced with those who have the right set of values. Once immune to the weasel wisdom of ‘Managerial Newspeak’ these people can abandon their ‘corporate agendas’ and restore academic freedom and collegial values to scholarly communities. Then academia can resume its normal programming, shaken but undeterred.

If a decade of critique in this vein has failed to generate workable alternatives, perhaps it is because it misdiagnoses the problem. The changes taking place in academic institutions are not finally reducible to bad ideology, and no amount of Academic Valuespeak will make them so. Instead, universities have entered a ‘post-Copernican’ phase of adjustment to a new set of realities, some of which imply unthinkable things.

**Structural explanations – the international scene**

Since the 1970s Trow has mapped a worldwide trend from ‘elite’ to ‘mass’ participation in higher education and predicted the advent of ‘universal’ participation. He argues that with each new phase the social function of higher learning is recast. Shaping the mind and character of small ruling elites gives way to developing the skills of wider technically trained classes, and in turn to adapting wider populations to rapid social and technological change.13

Consistent with this macro view of widening participation, a shorthand list of macro-shifts in the last two decades includes:

- The advent of new technologies allowing users to capture, combine and redistribute massive amounts of information, so that codified knowledge becomes hyper-accessible.
The rise of post-industrial societies amid economic globalisation, with social demand for mass tertiary training in the new professions meeting the rise of global markets in higher learning.

Global knowledge proliferation in techno-science especially, much of it now produced outside the university sector.

A proliferation of media channels that support mass cultures and global/tribal modes of consumption, production, identification and interchange.

The rise of postmodernism, with its tendency to liquidate all truth-claims, prefer questions to answers, and bemuse the public whenever solutions are called for.

The demise of socialism, with its fixation on state-mediated service provision, its hostility toward private enterprise, and its assumption that public goods and market mechanisms are mutually exclusive.

Each of these shifts is familiar, and a topic of study in its own right. But no neat new ‘theory of the business’ has emerged. It seems impossible to join the dots definitively, whatever disciplinary toolkit one brings. What does seem clear is that the changes of the last two decades have created a mismatch between older forms of academic culture and identity, and the strange new world that universities now inhabit.

At least one central assumption of the modern university tradition, embedded in the 19th century and continuing in spirit today, has been dismantled. This was the promise that in time, scholarly communities would create and disseminate a master-discourse of universal reason on which to build more enlightened societies. By means of Bildung (education-as-culture) and Wissenschaft (knowledge-as-science), scholarly communities would shape each new generation of culture-bearing elites, and provide the conceptual blueprints and expert advice governments needed to turn morality into social reality. In effect, universities would form an integral part of societal governance, bringing wisdom to governments and culture to the populace by regulating the production and distribution of higher learning.

The Magna Charta Universitatum, declared in Bologna in 1988, expresses this idea of the university. It envisions a scholarly enclave, separate from society but central to its well-being, supported by society’s resources but immune from the mundane concerns of government, industry and other institutions. Its main argument for occupying this privileged position is that in the long run, civilisation itself depends on the work of universities:

The future of mankind depends largely on cultural, scientific and technical development… built up in centres of culture, knowledge and research…The university is an autonomous institution at the heart of societies…it produces, examines, appraises and hands down culture by research and teaching…(it) must be morally and intellectually independent of all political authority and economic power…its constant care is to attain universal knowledge…”14

The declaration shows how natural it is for scholarly communities to profess that the creation and maintenance of the good society depends on their own capacity to regulate knowledge and judge what is good, true and beautiful. By deferring to their specialism in such questions, societies position scholarly communities as ‘acknowledged legislators’ – the ultimate guardians of societal values, moral standards, and high culture. This archetype is now so embedded in Western ideas of the university that challenging it seems unthinkable – much as it was once to contemplate the ideas of Copernicus.

Yet here we are, suddenly in an era of mass higher learning, digital archives and knowledge proliferation, with media platforms that offer the masses direct local access and global reach in the knowledge game. Seekers of knowledge have learned to ‘Google first, ask later’, sourcing information from well beyond the limits of any local institution’s archive, more quickly than the time it takes to go and visit one. Google itself, meanwhile, is busily scanning texts from major research libraries to create a universal online library15 on a larger and more accessible scale than ever.

In sum, knowledge has become globally distributed, hyper-abundant and hyper-accessible for individuals. Users and producers of advanced knowledge can now work outside academia, tap resources once readily available only in an institutional setting, exchange and self-publish their results online, and collaborate with anyone-anywhere on knowledge-intensive projects. Projects such as the Wikipedia can tap a vast array of contributors, while remaining indifferent to where they come from. These players can add to, debate and edit the official text via a parallel-process, multi-user approach. By virtue of its open source setup the project has grown with speed and resilience – not unlike the Linux software development project. This ‘bazaar’ approach to production differs markedly from the centrally planned, hierarchically sifted ‘cathedral’ approach16 that historically typifies large-scale knowledge projects.

Most of these developments can be attributed directly or indirectly to the good work of universities. The irony is their boomerang effect. Each advance chips away at the historic monopoly of universities themselves, as enclaves of expertise around which the universe of knowledge revolves. Their niche in higher learning, built over centuries, has allowed them to occupy a central role in regulating the canon underpinning national cultures; setting the boundaries between intellectual disciplines; supervising the production of learned works; and providing expert guidance to lay communities and government authorities.

As the era of mass literacy and global knowledge interchange emerges, canonical texts and higher learning no longer need pass through university channels. A more educated populace that takes free speech for granted has more information and media channels at its fingertips than ever before. Access to the...
blogosphere gives anyone a self-authorised ‘license to kill’ prevailing wisdom. In short, higher learning can escape the cathedral and take on a life of its own in the bazaar.

These shifts erode the notion that intellectual freedom and scholarly authority are institutional privileges. They level the playing field between scholars and other knowledge professionals, and between the keepers and the users of the archives. The implication for universities is that the archetypal campus-based ‘community of scholars’ is becoming a bit player in a wider universe of advanced learning, knowledge production, technological innovation and cultural transmission. To insist that this wider universe can’t be inhabited by rational, even superior beings begins to sound like ‘pre-Copernican dogma’.

Meanwhile scholars are trained to seek paradigm shifts out on the frontiers of their disciplines, not in their own back yard. Inside the university, it still seems common sense that knowledge is a public good and that the university is its custodian; that what is good for universities can only be good for societies; and that scholars are thus entitled to better support. So when governments fail to meet their demands, some interpret this as a failure to take responsibility for public goods more generally.17 Moves by successive governments to make higher learning itself more self-financing, industry-linked, client-responsive and business-like merely add the insult of ‘market ideology’ to the injury of funding cuts.

There is a logic here, but its premises are no longer self-evident. A government seeking expert advice need not rely on Kant’s ‘conflict of the faculties’. It is as likely to draw on a ‘conflict of the think-tanks’ to frame the issues, and then seek policy advice from private consultants. This applies even in the case of higher education policy, where advice to governments from scholarly communities may seem no more authoritative or disinterested than that of any other industry lobby, arguing for special conditions and taxpayer support.

To those who have lived their working lives in a university, all this may seem counter-intuitive, if not offensive. It is hard to ask any community to waive the privilege of being at the centre of the things it holds most sacred. As Goethe puts it, ‘by this admission so many things vanish in mist and smoke!’ But the signs have been there for some time. With the mass growth in technoscience for example, Clark argued in 1997 that:

the knowledge produced and circulated in universities is now greatly extended by the growing array of knowledge producers located in other sectors of society… internationally, no one controls the production, reformulation and distribution of knowledge… 18

In 1997 Gibbons argued that ‘mode 2’ knowledge projects outside academia call into question the way universities have been organised. They depart from the disciplinary norms and professional interests of academia by working more directly with a wider range of actors on solutions to social problems.19

In 2000 Gallagher observed that the work of Gibbons and his colleagues:

challenged many orthodoxies, including the linear model of science-driven innovation, the monopoly of universities in research, the sanctity of disciplines, elevation of the theoretical over the practical, and the insulation of academics from commercial realities…”

Considering the university as a cultural institution, Readings has argued that it is caught up in a wider crisis as Western societies adjust to the new dynamics of a global economy and postmodern culture. While economic globalisation erodes the independence of nation-states, postmodernism replaces the idea of a single culture and a stable national identity with multiple, shifting cultures and identities. These developments dismantle the role of the modern university as a producer/protector of citizen identity and the social fabric in a particular society with particular traditions. Instead it becomes just another transnational corporation offering products to consumers.21 It is a view that recalls Lyotard’s 1979 essay on the state of knowledge and the postmodern condition. Once knowledge is as fluid and mobile as money itself, these thinkers seem to suggest, then bye-bye Bildung and bye-bye Wissenschaft.

Other thinkers have examined the effects of mass media and mass culture on the role and status of intellectuals. In 1992 Baumann33 argued that the idea of ‘culture’ had been articulated by modernist intellectuals in a way that gave them a privileged role in the construction of the good society. But the rise of postmodernism and mass culture dismantles this role, and the intellectuals’ own sense of crisis is then projected onto the wider society:

the mass culture debate has been the lament of expropriated gamekeepers…it was the intellectuals who impressed upon the once incredulous population the need for education and the value of information…The market will…achieve what the intellectual educators struggled to attain…it will turn the consumption of information into a pleasurable, entertaining pastime…intellectuals tend to articulate their own societal situation and the problems it creates as a situation of the society at large, and its systemic or social problems…

In institutions meanwhile, postmodernists in the cash-strapped humanities have been hoist on their own Lyotard. As recent debates about the study of history in secondary schools show, by rigorously dismantling conventional ideas of truth and knowledge, intellectuals have eroded public confidence in the humanities as a source of cultural cohesion.

How has the collapse of socialism affected academic culture and ideas of the university? It is easy to forget that in the 1970s it was plausible for many scholar-intellectuals to subscribe (as Eagleton did in 197624) to a communist society of the future, where unlimited resources will serve an unlimitedly developing man…
Marxism offered a radical critique of industrial capitalism, a conceptual framework for designing an alternative, and a morally impeccable mission, dedicated to improving the lives of ordinary citizens. The economic blueprint was public ownership, not private ownership, planned economies not market economies, and production and distribution processes geared not to corporate profits or private wealth, but to social needs and public goods. It was a seductive but utopian vision – moralism cross-dressing as science.

In retrospect there was little risk that 1970s radicals would get around to organising a revolution in Australia. At the same time, in our universities there was no great tension between armchair socialism and the lived experience of academic work. This was publicly funded work, set apart from the world of industry and commerce, free from competitive risk and untainted by profit motives. The funded expansion of universities offered scholars a good mix of autonomy, leisure and career mobility, and an anti-capitalist, anti-corporate counter-culture was easy to sustain. On weekdays lecturers could profess to their students that the revolution would one day come – and at weekends still find time to renovate their inner-city terrace houses.

But since the 1989 collapse of communist regimes in Eastern Europe, even armchair socialism has lost credence. Reflecting on the effects of this on Australian intellectual life, Manne observed in 1998 that the ‘sediment’ of an anti-capitalist counter-culture remained, its rhetoric largely intact:

Some of the hostility to the economy of contemporary Western societies, as well as to Western social and cultural forms…is the sediment of Marxism…not that one should be uncritical of how contemporary economics function, but the old forms of anti-capitalism, premised on a socialist alternative, have somehow persisted without the socialist alternative being available…

As far as I can tell, old-left stances opposing Capitalism with a capital C have given way to new-left stances opposing the ‘Market with a big M’. Allergic reactions to the idea that ‘students are customers’ for example, may or may not express the ‘sediment’ of Marxism. But they do reflect a legacy culture that assumes public goods flow exclusively from public money, and that market mechanisms, even if economically helpful, are socially harmful. On this view the problem with the idea of ‘students as customers’ is that it imposes an ‘exchange’ relationship on their dealings with teachers, when these should be seen as a ‘gift’ relationship.

Given its premises all this makes sense; but the premises are flawed. What we call ‘the Market’ is actually a shorthand term for a multitude of relations that support many kinds of transactions. It is not a monolithic mechanism that deals only in consumers, commodities and one-off exchanges, turning all it touches to dross. In the professional services sector, for example, solutions to complex problems are normally co-developed by client and consultant working in tandem, often with inputs from third parties. Adding value in this mode entails a degree of trust and mutual understanding, typically built in a series of dealings over time. Hence business books with titles such as Customer Intimacy.

Second, similar kinds of interchange occur in higher education, where the alchemy of student learning relies on various modes of co-production between students, teachers, texts and other students. Whether or not students pay fees to enrol, and whether or not their teachers are paid from the public purse, learning is not something students buy, nor something teachers donate.

In sum, calling education a ‘gift’ is as misleading as calling it a ‘commodity’. The notion that education should be considered a great public good when state-funded, but a mere private good when privately-funded, is obviously flawed. As Marginson has argued, in higher education internationally both public and private goods are produced in tandem (though in differing proportions, in his view) in both the public and private sectors.

Structural explanations - the Australian scene

In view of all this the complaint that governments have abandoned responsibility for public goods, evidenced by their refusal to fund an endless expansion of public provision, becomes less persuasive. Apart from the inconvenient truth that Australian governments now tax more and spend more than they did in the 1970s, current government policy at the secondary, technical and university levels now has a common thread. Its strategy for responding to rising demand, driving institutional reform and creating more efficient provision is to create a viable private sector that competes with the public sector. Recent revisions to the MCEETYA protocols – the inter-government regulations that set criteria for providers to use the title ‘university’ – reflect this by relaxing the rule that a research-teaching nexus must be present as a proxy for the quality of undergraduate teaching.

The angst in Australian scholarly communities as they adjust to a new mixed economy of higher learning can be explained in part by their recent history. In the 1970s market demand for degrees was limited, higher learning the pursuit of a largely
middle-class minority, and funded expansion the norm. Funded expansion reached its height in the mid-1970s, when the Whitlam Government assumed the long post-war boom would continue, underwriting new social spending on all fronts. It was plausible for a rising class of academic baby-boomers to equate the apparently endless, funded expansion of their own projects and prospects with a general expansion of the public good. But in the 1980s and 1990s, with the advent of a post-industrial society and the rise of mass higher learning and pervasive global interchange, everything changed.

Once an enclave set apart from the mainstream, higher education is now an industry. Once geared to government funding and local under-graduates, Australian universities now participate in a global learning boom and a life-long learning boom. In the transition from elite to mass higher learning, domestic student growth has outpaced funding growth and staff growth. The most common response from institutions was to supplement funding by tapping offshore markets for full-fee students. This strategy added to revenues but also to costs, and ramped up institutional scale and administrative complexity.

Sector-wide, the effect is one of ‘self-inflicted’ expansion, accelerating the shift to greater reliance on private dollars, and creating more pressure to squeeze efficiencies from economies of scale and wider use of casual and part-time staff. Alongside the rise of mass higher education, new disciplines and sub-disciplines have multiplied, adding a ‘knowledge boom’ to the ‘learning boom’. In a sector once geared to funded expansion and collegial *laissez faire*, a natural response has been to keep adding new programs, employing more sessionals and hoping for better funding.

In the short term these moves are easier than rationalising programs, initiating departmental mergers, or negotiating partnerships with non-academic organisations. But as the documentary film *Facing the Music* illustrates, when a small department fails to find external support, economies of scale or new streams of income, it risks falling into decline, distress and dollar-driven rationalisation. The weakness of work cultures that emphasise academic freedom in all its guises becomes apparent when the main strategic risks they face are program renewal and resource management. More generally, *Academic Valuespeak can be used to block any whole-of-discipline, whole-of-faculty or whole-of-institution approach to planning and review. Without strong central mechanisms to guide them *laissez faire* work cultures in universities have responded to the knowledge explosion and the rise of mass higher learning with course proliferation. Looking back on his own academic career in an Australian sandstone university, Riemer illustrates the point:

> it should have become obvious by the late eighties that the new mode of English Studies…was insupportable in a climate of severe financial restraint. The central platform of the anti-authoritarian, democratic department…was the almost total lack of compulsion.

Gone were the traditional “core” courses…with large lectures of several hundred students…Instead options multiplied…Many…were the traditional staples of literary study; others were bizarre fantasies reflecting individual academics’ obsessions more than any pedagogic necessity. It was a self-indulgent and appallingly expensive system to operate…Each of us appeared to be acting as though we were running our own separate universities. Large-scale differences in workloads emerged…Resentments inevitably arose…

More recently, private providers and offshore competitors have begun competing with Australian universities for domestic students. These players aim for niches in which to excel, rather than attempt the smorgasbord of programs that many established universities now struggle to sustain.

**Emerging new theories of the business**

Internationally meanwhile, different kinds of universities have emerged to meet the demands of mass higher education. Examples include the for-profit, internet-boosted University of Phoenix in the United States, and the British Government’s successful 1970s experiment in not-for-profit distance higher education, the Open University (OU). While Phoenix has had more attention, OU is the real pioneer. Both enterprises offer higher learning on a mass scale by combining centrally developed curricula with off-campus modes of delivery.

Their success reflects an ability to standardise courseware as a basis for quality, offer flexible local access and most critically, manage *scalability* to expand or contract rapidly to meet shifts in student demand. Both enterprises offset high levels of investment in courseware design with lower infrastructure costs, a larger teaching-only workforce – and (I suspect) by preventing course proliferation. Lacking a campus experience for students, both also lack a visible research-teaching nexus as their proxy for educational quality. Instead they offer lower course prices, more local and flexible access for students who juggle study with work or family commitments, and student-staff ratios of no more than 18 to 1 (Phoenix) or 20 to 1 (OU).

Both cases are logical responses, by the private and public sectors respectively, to an era of mass demand for higher learning. They illustrate that the campus-based model, the research-teaching nexus and collegial *laissez faire* practices all place limits on the capacity of traditional models to meet mass demand for higher learning efficiently. In competitive terms student-staff ratios at Phoenix now compare favourably with many Australian public universities, in a sector that averaged 21 to 1 in 2003.

**A double decline**

The new emphasis in Australian universities on enterprise management and program rationalisation is a rational response to new market and policy circumstances. The new context is characterised by declining public funding relative to growth,
mass local and global markets for higher learning, program proliferation in response to the knowledge explosion, and rising competition from other knowledge players in the new mixed economy of higher learning.

All this puts the modern university's accepted 'theory of the business' under pressure. It is harder to be research-intensive and educationally comprehensive in the midst of a knowledge explosion when the cost of research infrastructure is potentially huge, but revenue growth comes primarily from students. Harder still when the logic of extending student access is to create satellite campuses where a teaching-research nexus is supposed to be supported. And harder again when institutions face more open competition from niche providers who don't need to carry the same infrastructure costs.

Over the last two decades Australian university communities, largely run by baby boomers who entered their careers in the 1960s and 1970s, have faced a double decline. An emerging crisis in the traditional role and structure of the modern university has run in tandem with the local dismantling of the funding assumptions of the 1970s. According to surveys of Australian universities by McInnis in 199936 and Anderson et al in 200237 the sense of pessimism about the social status, conditions and career prospects of academics has been most prevalent among older and more senior groups of full-time academics.

So far as a 1970s legacy culture persists in Australia, its local 'pre-Copernican dogma' is that academic freedom entails not just free inquiry and free speech, but the right to be resourced by governments; that business-like aims and practices are bound to subvert scholarly purposes; and that only publicly-funded institutions can produce public goods.

For university managers the dilemma has been that the only sustainable strategies open to them have been ones that, culturally speaking, were already ruled out by sections of their scholarly communities. The risk for managers who attempt to push strategies through regardless is that scholars will disengage from the 'academical corporation' that supports their work, and retreat into an echo chamber of critique without solutions. The alternative risk for managers who defer to these constituencies is that ruling out market-oriented strategies simply leads to greater dependency on public funding. Even where this is a small part of the institutional budget, competing for public funding windfalls becomes both a proxy for success and an alibi for failure.

For institutions the governance challenge has thus been to blend an academic case with a business case on questions of mission, strategy, decision-making and operations. The leadership challenge has been to devise and install the new disciplines institutions need to rationalise programs, select market niches, capture opportunities and attract private sponsors – all without abandoning their public mission, lowering standards or damaging reputation.

Reconfiguring the university’s ‘theory of the business’

In the midst of all this, on what basis does a public-spirited university stay afloat and keep its mission intact? A promising recent development is the growing emphasis on ‘third stream’ projects. These require academic expertise, but are not research or teaching as such. The fact that they constitute an emerging ‘third mission’ for academia is apparent from the University of Melbourne’s recently announced ‘triple helix’ strategy. Along with research and student learning, Melbourne now specifies ‘knowledge transfer’ as its third academic priority.38

Reshaping the core business of an established university is no small task. The Titanic analogy is common among strategists, since any new direction will entail some rearranging of deck chairs. But it is rare to be asked to rearrange the icebergs as well. Adopting knowledge transfer as the third element of an institutional mission previously built around the teaching-research nexus poses this kind of challenge.

At the same time, defining a third stream of academic work opens up new strategy options. It creates space for an institution to introduce new criteria to evaluate both new and existing programs, and ensure their strategic fit with external developments. In programs where the ideal-typical ‘teaching-research nexus’ seems artificial (and the evidence seems mixed on whether in practice, combining them helps or hinders)39 a department or faculty might build its niche around a ‘teaching-transfer nexus’ instead.

New government policy options also arise. In a more diverse higher learning sector, new entrants might seek recognition as universities on the strength of a suite of ‘teaching and transfer’ programs that match the local needs of a community or industry. This would retain an emphasis on scholarship as the basis for quality assurance without ensnaring the teaching-research nexus as its proxy. It might also create a better balance among researchers between peer/career interests in ‘extending the discipline’ and a community or industry’s interest in ‘helping us solve our problems’. However, as yet there is no shared vocabulary among policy-makers or practitioners to define ‘knowledge transfer’ – a topic on which the MCEETYA protocols are silent.

The virtue of ‘knowledge transfer’ (for some its limitation) is that it echoes but is not confined to the best-known example: research commercialisation leading to technology transfer via market mechanisms, as in the case of the cochlear implant. As consultants PhillipsKPA observe, the range of existing activity makes definition difficult; the challenge is to be clear enough to aid policy and program development without ‘straightjacketing’ the concept.40

While no better shorthand term has emerged, ‘knowledge transfer’ seems inadequate for two reasons. Its common-sense connotations make it hard to differentiate from the familiar
academic tasks of teaching, lecturing and publishing. It also implies a one-way, linear relationship in which knowledge is produced by scholars in universities, then applied by others elsewhere. Both these understandings invite a business-as-usual approach, rather than one geared to greater collaboration beyond the conventional boundaries of teaching and research communities. Other common terms such as ‘engagement’ are less misleading, but potentially less meaningful in common parlance. Writing letters of complaint to the newspapers is arguably a form of ‘engagement’ – as is bagging public figures in the blogosphere. But whether such hobbies should count as a third stream of scholarly work is debatable.

In short, the risk of under-definition is that everything will become ‘third stream’. The most beautiful minds will speak of knowledge transfer as if they were Russell Crowe in a shed full of magazine clippings, making more and more connections less and less coherently. So perhaps the most useful way initially for institutions to differentiate knowledge transfer is to define it narrowly: as the co-production of new understandings and solutions that tap the expertise of non-academic partners. This could apply whether the latter are collaborators, clients, intermediaries or financiers.

Because these other actors will bring different agendas and cultures to the equation, clearly there are risks in partnering with them. However the point is not to eliminate all risk, but to extend the reach and impact of the academic mission by managing risk with integrity. All this makes knowledge transfer projects, however defined, a case by case proposition. Institutionally it implies a more open and flexible repertoire for handling university-government-industry-community relations.

Once a university chooses this path, the logic is for scholarly communities to alter their time-honoured stance. Instead of defending historically hard-won independence to protect their sphere from the pressures of other spheres, their task is to manage a matrix of interdependencies with other social and economic actors. In parts of academia all this will seem counter-intuitive. The paradigm shift in organisational settings implies a significant cultural shift. As Kuhn described it in 1957:

To Copernicus the behaviour of the planets was incompatible with the two-sphere universe; he felt that in adding more and more circles his predecessors had simply been patching and stretching the Ptolemaic system to force its conformity with observations…clear evidence that a radically new approach was imperatively required. But Copernicus’ predecessors…had little doubt that the system would ultimately be made to work…A conviction of this sort is difficult to break, particularly once it has been emboldened in the practice of a whole generation of astronomers who transmit it to their successors through their teaching and writing…

Leading and managing reinvention

To summarise, open-minded evidence-based thinking and strong cultural norms do not always go hand in hand, particularly when a community faces a ‘conflict of the archetypes’. In the cases of corporate crisis that Drucker analysed, strong cultures built on past success had their blind spots. These prevented insight into new strategic realities, in turn preventing new approaches to sustain the work of the enterprise. Or as they say in big business, ‘culture eats strategy for lunch every day’.12

In a post-Copernican world the familiar modes and models are harder to sustain amid the new dynamics of the knowledge game. But with few exceptions, the response of established universities so far has been mostly patching and stretching, not a widespread adoption of new ‘theories of the business’ that radically rework how they operate. How much reinvention is needed to meet these new conditions? The good news is that no single institutional community need address all these developments at once, with a new ‘ideal type’ of university. A more diverse sector offers scope for each institution to articulate its own ‘vision eclectic’. The bad news is that in most Australian universities, spare resources are scarce and any proposal for significant change will be contested. No matter how much prior consultation occurs, wide consensus on any particular course seems unlikely.

Where does all this leave university managers? In Australia they have often been cast as culprits, either for breaking with the collegial norms of a different era, or for failing to win better funding from government. Whatever the vision or strategy, a large part of the leadership task will be to engage staff communities in working through the challenges involved. But how?

In a case study during 2000-2001 I used Heifetz’s ideas on how US government and community leaders tackled large-scale social adaptation to examine how Australian university leaders introduced change. Heifetz does not discuss university leadership specifically, but does offer insight into the defensive routines that occur when a community has to adapt to new realities:

when the society has no ready solution for the situation, the social system may still try to apply responses from its repertoire…people fail to adapt because of the distress provoked by the problem and the changes it demands…holding onto past assumptions, blaming
authority, scapegoating, externalizing the enemy, denying the problem, jumping to conclusions…may…feel less stressful than facing and taking responsibility for a complex challenge.43

Framed as action research, the case study mapped the experience of a small group of middle and senior level managers in one university. I used a series of one-to-one interviews and focus group sessions using the interactive survey method outlined earlier. These managers spent most of their time juggling three tasks: sustaining the ship, developing the mission and reorienting the staff communities. Many encountered a mismatch between legacy systems and cultures geared to fully-funded programs and laissez faire work norms, and the new systemic challenges facing their institution.

For example, the governance mechanisms for creating new academic programs did not envisage institutional competition for projects in an international higher education market:

Let’s say… I’m going off to Vietnam next week, and an opportunity comes up for us to teach a course in Vietnam…but there’s a competitor from the UK and I have to decide a Yes or a No on the spot. Now…if I can say “Yes”, I know it’ll save some jobs, but… I don’t actually have the authority from the academic board to create an academic program… (Pro-Vice-Chancellor)

We have a dynamic external environment: an offshore course opportunity, which absolutely pushes the boundaries in terms of turning things around…then we’ve got a whole academic approval process which is based on a 15 month turnaround…What’s an appropriate balance between responsiveness and quality assurance?… (Divisional Manager)

While budget responsibility had been formally devolved to the Schools, not everyone had grasped the fact that their programs and salaries were no longer fully funded:

a lot of people struggle with the difference between the budget as an estimate, and the allocation of government funds…it used to be a more stable funding model: “Yes, we got the money in, and then we gave you an allocation”…But that funding model has changed for about four or five years, and there are still people who don’t understand…there’s an expectation, that “What we say is what we’ll get.” But… “You’ll actually get what you receive and earn…” (Finance Manager)

in terms of educating the staff…about the challenge that lies before us, that’s something that has yet to be done…making it clear to people that if you award yourself a 12 per cent salary increase…you’re going to have to work 12 per cent harder by the end of the period in order for everyone to stay the same…I hope staff are rational about this – either they’ve made the judgement that…without anyone doing anything different, there will be the equivalent of 12 per cent of the total salary bill in additional money at the end of 2003…or we’ll have to generate 12 per cent more… (Pro-Vice-Chancellor)

Many of the managers in the study group were critical of the disengagement and complacency they encountered among staff communities:

there is too much of a culture here still of people wanting to be left alone, wanting to set their own standards of what’s good enough, of them only having to account to each other, seeing the whole quality agenda as a corporate imposition, talking about the importance of collegial governance, not really appreciating the universities where you have genuine collegial scrutiny. (Pro-Vice-Chancellor)

there’s an assumption about what life would be like…I was involved in the process where we spilled all positions and people had to reapply…One of them was a senior lecturer who had no idea…it came as a shock to her and a shock to her colleagues, because she’d been managing to float in and float out and not be around and not be available for quite some years, and she didn’t have any publications… (Dean of Students)

anybody in any university in this country will be able to tell you that they can’t sort out issues like workload very easily, academic workload, that what you get people to do in the non-teaching periods…half the staff just seem to disappear at the end of assessment, and you don’t see them again… (Head of School A)

The Heads in particular struggled to engage their academic colleagues in the task of devising better ways to handle School workloads. Some were acutely conscious of the collegial/managerial standoff; but all found that unless they took up authority to reach decisions, the result was collegial stalemate:

what I try to do is say “OK, these are the issues” and I put it in writing. And I ask people for responses…try and encourage them to see the bigger issue…try and get a consensus of opinion to try and change people’s attitudes…So I try to do that from a collegial perspective – and then finally when none of that works, I just say, “I think you need to do this and this and this”… (Head of School D)

So far I’ve worked pretty collaboratively here, I haven’t made any decisions about anything, really. But the one time I did try to do it, I thought it wasn’t going to work…I wasn’t sure how to deal with it…other than by saying “This is how it’s going to be”… (Head of School B)

I’m continually thwarted…by the arguments about consultation. There’s a different kind of view I think among some staff…about what constitutes consultation…I know what I want at the end, and I want to see it happen fairly quickly, but it won’t, because there’ve been too many personal agendas of staff getting in the way of it. But then I haven’t handled the process particularly well, because it hasn’t met all the aspirations of all staff…I think the school would be better organised if we did it the way I’d like to see it happen, but that’s not universally agreed… (Head of School C)

Head C was more attuned to the critique of managerialism than the other Heads in the study, perhaps due to his background in social science. He was also the most frustrated of the Heads. His approach to initiating change in a self-consciously collegial-democratic School left him open to veto from any one of his social science colleagues:

My colleagues are not ready to accept the Gesellschaft component of what I’ve described as my sources of authority, they think it should be entirely Gemeinschaft. Well that’s not quite true. Sometimes they
will recognise the need for managerialism ... but they'll be very quick
to see that it's not overstepping the bounds of what they regard as
appropriate managerialism ...

Head C's situation illustrates how the norms and rhetoric
that a community uses to express its values and principles can
also be used to legitimise avoidance and inertia. No matter how
urgent the need for change, Academic Valuespeak provides a
handy set of alibis for deferring decisions, preventing reforms
and deflecting responsibility. It creates a praxis trap for managers,
making them hostage to staff constituencies; and it puts staff groups
at risk of disappearing up their own Gemeinschaft while their budgets
and programs collapse. While the
rhetoric is hard to crack, its underlying
logic is as follows:
• The primary task of academic
leadership is to uphold academic
freedom and collegial-democratic
values.
• Under the rule of academic free-
dom the 'personal agendas' of individuals must be accom-
mmodated, and take precedence over any wider agenda.
• In practice, collegial-democratic processes mean ensuring
that academic staff collectively control all significant deci-
sions, and that each has a right to choose what will consti-
tuate adequate 'consultation'.
• Where these processes fail to solve an intractable problem,
the only option is to continue with further consultation in
the hope that a solution entailing no compromises will
eventually be found.
• This ideal solution will accommodate 'all the aspirations
of all staff' without any trade-offs and without any shift in
work habits or expectations.
• 'Universal agreement' is necessary before any decision can
be made.
• The Head's own sense of urgency about a problem is insuf-
ficient reason to impose a deadline for reaching a collective
decision, or failing this, imposing a unilateral solution.
• Any attempt on the Head's part to impose a deadline or a
decision is open to veto by any academic staff member, for
any of the above reasons.

Despite all this, most of the managers in the case study found
ways to initiate and sustain minor reforms. Often they needed to
spell out a broad direction, then allow staff communities to
construct and negotiate detailed micro-solutions that would
work with particular programs.

In this case, managers' strategies for coping and adapting
were makeshift on two levels. Day to day they engaged in a
kind of slow motion judo in response to the hydra-headed
realities that constantly arose to demand attention:
what seems like... taking control, initiating, controlling the agenda
and so on, from outside and further down the line — when you're
actually there, in that position, a very high proportion is still
responding to pressures... from outside the university, outside the
management group... when people say,
"It must be easier because you've got
more power" and so on — I've never
felt that... the accountability is more
visible and sharper... the assumption
that you're somehow more in control
the higher up in the organisation you go
— although it's true — it doesn't feel like
that... as... acting PVC I feel I have less
luxury to make decisions, to cut corners
as a survival strategy, because the repercus-
sions would be really problematic...
(Dean of Research)

In parallel, they pursued short to
medium term managerial agendas to
install new structures and processes for handling these kinds of
problems. While the technical aspects of these change projects
were formidable, typically the cultural challenge was more so.

In the case of an academic case for any change or initiative. Overall, the insti-
tution needed new governance protocols that distinguished
different domains of decision-making. Managers needed clear
processes for reaching difficult decisions that included staff
consultation, but avoided the praxis trap of consensual deci-
sion-making on issues likely to lead to collegial stalemate.
Staff communities needed new work disciplines and decision-
making norms crucial to group success, but not yet part of
their repertoire.

To generalise from the case study, the leadership task of
engaging staff communities in strategic adaptation means sev-
eral things:
• Clarifying exactly what has changed in the institution's cir-
cumstances and highlighting where there is a mismatch
between prevailing norms and external realities.

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then allow staff communities
to construct and negotiate detailed
micro-solutions that would
work with particular programs.

By adapting socially I mean developing the organizational and cul-
tural capacity to meet problems successfully according to our values
and purposes... getting people to clarify what matters most, in what
balance, with what trade-offs, becomes a central task... "41

12 After Copernicus, Geoff Sharrock
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• Bringing stakeholders into the process of thinking through the implications of the adaptive challenge for academic programs, and for sustaining their institution as both a corporate entity and a set of purposes (ship and mission).
• Generating plausible macro-solutions to provoke and encourage staff groups to create their own micro-solutions.
• Confronting groups at all levels with the fact that all solutions entail trade-offs, and that change is most likely to be justified as a better set of trade-offs than the existing set.
• Gaining staff consent to impose ‘management’ solutions when action is called for but where full consensus is clearly unachievable.

Conclusion

Post-Copernican universities live in interesting times. There are more risks and pressures for institutions, programs and the people who work in them than in the 1970s. The transition to new structures, new modes of decision-making and new forms of interdependence will continue to cause distress. This requires more activist forms of leadership than previously, and more effort to engage staff communities in considered adaptation.

But there are also exciting possibilities for public-spirited institutions to create new ways of working, and contribute to their societies in more diverse and interactive modes than previously. To work through the changes of the last two decades, institutions have begun to reinvent themselves from within. In this work, staff communities need more support in coming to grips with the forces reshaping their lives, and managers need wider recognition of the magnitude of the leadership task.

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References and endnotes

1. A summary of the story, together with Goethe’s remarks on Copernicus, is accessible online at http://www.blupete.com/literature/Biographies/Science/Copernicus.htm
2. A summary of the story of Galileo is accessible online at http://www.skyscript.co.uk/galileo.html
3. Immanuel Kant’s essay, ‘The Conflict of the Philosophy Faculty with the Theology Faculty’ was published as part of The Conflict of the Faculties in 1798 (after the King’s death). Accessible online at http://www.eco.utexas.edu/~bmcleave/350kPEEreadings.html
8. Wilhelm von Humboldt put it like this: ‘The appointment of university professors must be exclusively reserved to the state, and it is surely not good to permit the various faculties more influence in this matter than an understanding and fair-minded administrative body will do of its own accord… the disagreements among professors on their specialties can, even unintentionally and without ill will, distort completely their point of view as to what is good for the whole…’
9. John Henry Newman put it this way in Discourse 1 of The Idea of a University: ‘About fifty years since, the English University, of which I was so long a member, after a century of inactivity, at length was roused, at a time when… it was giving no education at all to the youth committed to its keeping, to a sense of the responsibilities which its profession and its station involved, and it presents to us the singular example of an heterogeneous and independent body of men, setting about a work of self-reformation, not from any pressure of public opinion, but because it was fitting and right to undertake it. Its initial efforts, begun and carried on amid many obstacles, were met from without… by ungenerous and jealous criticisms… The course of beneficial change made progress, and what was at first but the result of individual energy and an act of the academical corporation, gradually became popular, and was taken up and carried out by the separate collegiate bodies…’ Accessible online at http://www.newmanreader.org/works/idea/discourse1.html
10. Each focus group was attended by up to 16 people. The survey presented 42 propositions under 7 themes. Participants completed it at the start of the session and their data was entered in a coffee break. The results presented group average scores and distributions for each proposition, and participants were invited to give reasons for their scores as a way of drawing out issues and testing proposals. Details of the method are available at www.teamwisetools.com
12. This was the solution proposed for the University of Melbourne by John Cain and John Hewitt, 2004, Off Course from public place to marketplace at Melbourne University, Scribe Publications, North Carlton, pp. 210-211
15. See http://books.google.com/googlebooks/library.html
17. See for example Margaret Thornton’s introduction to volume 2 of The Journal for the Public University, 2005, online at http://www.publicunix.org/jrn/volume/2/journal_2.html


27. Simon Marginson puts it this way: ‘The ownership of higher education can be exclusively public, mixed, or exclusively private. But almost everywhere in the world, what is produced is a variable mix of public and private goods. Free state-controlled universities produce certain private goods, while at the same time Ivy League private institutions contribute to public goods, collective goods and externalities...’ ‘Rethinking the public-private divide in higher education’ in The Journal for the Public University, vol 2, 2005, available online at http://www.publicuni.org/?doc=journal_2_pp

28. The MCEETYA protocols, revised in July 2006, now offer a framework that emphasises scholarship as a prerequisite for teaching quality, with research a prerequisite for supervision of research degrees at postgraduate level. Accessible online at http://www.mceetya.edu.au/mceetya/default.asp?id=15212


30. Bob Connolly & Robin Anderson, 2001, Facing the Music, Film Australia


33. For an account of the University of Phoenix and its implications, see Glyn Davis, op cit.


35. AVCC (Australian Vice-Chancellors’ Committee) Student to Teacher Ratio 2004, accessible online at http://www.avcc.edu.au/content.asp?page=publications/stats/staff.htm

36. In a survey of 15 universities in 1999, McInnis found that ‘early career’ academics with a median age of 37 were more likely to be more satisfied with their jobs (66 per cent) and less pessimistic about the prospects for aspiring young academics (45 per cent) than ‘late career’ academics with a median age of 55 (45 per cent satisfied, 69 per cent pessimistic). This was despite the fact that ‘late career’ respondents were more satisfied with their own job security than ‘early career’ respondents, less likely to be hindered in their teaching or research, and relatively more free to pursue their academic interests. ‘The Work Roles of Academics in Australian Universities’ DETYA, June 1999, accessible online at http://www.dest.gov.au/sectors/higher_education/publications_resources/profiles/archives/work_roles_of_academics-australian_universities.htm

37. In a survey of 12 Australian universities in 2002 Anderson, Johnson and Saha found that 47 per cent of academics over the age of 55 believed that ‘collegial’ decision-making in their universities had declined ‘a great deal’ compared with 18 per cent of respondents under the age of 40. ‘Changes in Academic Work: Implications for Universities of the Changing Age Distribution and Work Roles of Academic Staff’, DEST, accessible online at http://www.dest.gov.au/bigbered/othersub/academic_work.pdf

38. The University of Melbourne Strategic Plan 2006 is accessible online at http://www.unimelb.edu.au/strategicplan/index.html


42. The quote is attributed to a senior executive at Merck Pharmaceuticals.


44. Ronald Heifetz, op cit, pp. 3, 22