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Uni 2.0: Will the internet kill Universities?

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UNI 2.0: WILL THE INTERNET KILL UNIVERSITIES?

Microsoft co-founder Bill Gates recently described universities as an endangered species. The university's traditional role as creator, curator and distributor of knowledge is under direct threat from the internet. This is a profound challenge for an institution that pre-dates almost all others in western civilization. The digital revolution is transforming almost every aspect of human existence. Will the internet kill universities?

If universities don't adapt, they *will* die. When information technologies change, even the most entrenched institutions can be overturned. The invention of printing around 1450 was a vital precursor to the Reformation. Not only did printing enable mass circulation of subversive doctrines: the medium itself challenged traditional authority and hierarchy.

Individual universities like Stanford have incubated many of the new ideas and innovators that are driving the digital revolution. Yet as institutions, universities are struggling to adapt to the dynamics of the new world.

Universities are information businesses. When the way we handle information changes fundamentally, information businesses must change.

We're living through one of the most extraordinary transformations in human history. More recent digital innovations, loosely grouped under the Web 2.0 label, are unleashing possibilities of interactivity, collaboration and creativity that were previously unimaginable. Gatekeepers and intermediaries are under siege as a digital tidal wave of disaggregation sweeps through existing structures. As Finance Minister I developed a Government 2.0 strategy to address these challenges in the Federal public sector. I'd be the first to admit that my work was only a tentative first step. There's much more to be done.

eLearning is taking off . . . .

eLearning can be defined in a number of ways. According to the IBIS World definition, which requires 80 per cent of content to be delivered online, Australia's eLearning sector generates over $4 billion in annual revenue, employs over 16,000 workers, involves nearly 1,000 businesses, and has grown at an average annual rate of 22 per cent over the past five years. Key players like Open Universities Australia, Seek, Navitas and Kaplan have become substantial eLearning businesses. Specialised businesses in content creation and web design are emerging. The old days when online degrees were things you purchased from Dodgy Brothers University on Norfolk Island are gone.

eLearning has moved a long way beyond mere replication of physical content in the digital world. Accessing course materials and lectures online is now commonplace. Universities have learning management systems that allow traditional content to be translated into digital form. Canadian researcher Stephen Downes calls this "eLearning 1.0": a transitional stage where teaching is still governed by the dynamics of the physical world. eLearning 2.0 involves fundamentally different forms of teaching and learning: collaborative, interactive, and creative. Blogs, wikis and podcasts are changing the nature of the interaction between teacher and student. Haptic technologies are allowing physical activities to be taught online. Where once the student learned *from* the teacher, now the student learns *with* the teacher and other students. Students have always learned from each other, enabling that collaborative learning is now central to the teaching role.

Lots of exciting things are happening in eLearning. Curtin University is moving to all online assessment delivery: students won't be able to hand in paper assignments any more. The University of New England puts all its courses online. James Cook University runs shared lectures across its two main campuses. Monash University uses its Malaysian campus to do tropical terrestrial biology teaching in Melbourne. Swinburne University has commenced a joint venture with Seek to develop new eLearning products. The Digital Futures Institute at the University of Southern Queensland is developing podcasting options for teachers to convey feedback to individual students. Melbourne University is developing haptic technologies that allow students to learn surgery online. Major universities are funding *The Conversation,* an online forum for researchers, and have ceased funding the *Australian Literary Review* newspaper supplement. The Institute for the Broadband Enabled Society at Melbourne University is now exploring a UniTV equivalent of *The Conversation*. Open Universities Australia enrolments are soaring: OUA is experimenting with game-based learning and developing a virtual reality tool for archaeology students. Federal and State governments are funding programs to teach academics how to use online technologies. One of the most popular learning management systems used in universities, Moodle, has been developed by an Australian computer science researcher, Martin Dougiamas. Australian National University computer science lecturer Tom Worthington describes Australia as "a world leader in eLearning".

. . . . but progress is patchy.

Underneath such highlights, though, the picture is a bit different. Regional universities accustomed to relying on distance education are making a serious effort. The names that surface in eLearning discussions most often are invariably the more obscure universities that can't rely on brand prestige. They recognise the threats and opportunities in eLearning, and they're making a serious effort to adapt. There's a major eLearning conference in Sydney in a few weeks: the speakers list is drawn from Central Queensland University, Queensland University of Technology, University of New England, Edith Cowan University, University of Southern Queensland, Gippsland Institute of TAFE, and Tasmanian Polytechnic. There are a couple of sandstone speakers, but the major metropolitan universities are largely absent.

Gregor Kennedy, director of eLearning at Melbourne University's Centre for the Study of Higher Education, is cautious about Australia's progress in eLearning. His research reveals quite high student use of basic eLearning products, such as announcements and study materials online, but very low use of interactive products like wikis and blogs.

If eLearning means more inquiry-based, self-directed and peer-based learning based on collaboration and interactivity, we haven't really progressed very far. The highlights might look great, but that's all they are: highlights. Some individual academics are doing great things, some institutions are too. The picture is patchy. When I spoke to Neil Ang from Victoria University's Web Futures Group, he pointed out that he is unable to access video of lectures in the computer science course he is studying at another university.

Victoria University is doing okay . . . .

So how is VU faring? Our picture is also very mixed. A major effort to upgrade and rationalise our technology platform is well underway. We already have plenty of stuff: WebCT as a learning management system, Lectopia to video lectures, Pebblepad to allow students to create their own e-portfolios, Turnitin to detect plagiarism, Elluminate to provide virtual classrooms, and Equella (formerly The Learning Edge) to enable management of learning content. It sounds great, 'til you check the detail. Lectopia only operates when an individual lecturer decides to activate it. VU students can't enrol online. There are very few fully online courses.

The technology platform is a jumbled mix of disconnected parts. Some systems like Equella have very low usage rates. WebCT and Lectopia suffer from basic technical weaknesses. Turnitin and Pebblepad are confusing and difficult to use.

The good news is that these problems are being addressed. The eLearning Environment Review panel has identified the weaknesses, and is about to tender out the task of building a new integrated system.

So far so good.

What's not quite as good, though, is the level of attention to the other half of the equation: teaching. Fixing the technology's important, but so is changing pedagogy. So far, VU's efforts in this area have been modest. The University has a Curriculum Innovation Unit charged with helping academics develop new approaches. It has very limited resources and a low profile. Information Technology Services assists, but its role is obviously focused on technology issues. The Learning Spaces of the Future project, which involves dialogue cafes and new content dissemination strategies, looks promising. Overall though, insufficient effort is being made to help people adapt. There seems to be no overarching analysis of need, nor any strategy to change teachers and teaching.

This seems to be typical of Australian universities. While we've made great progress in eLearning, there's been an awful lot about "e" and not much about "learning". Plenty of tech, very little ped. VU appears no worse than the norm across the sector, and we may even be slightly better than average. We shouldn't assume that will be good enough.

. . . . but we need to do better.

New technologies don't just change how we do things. They change *what* we do. Satisfying our collective needs and desires involves an intricate web of countless tiny choices. When the means of pursuing our aims changes, so does the calculus underpinning these choices. And that means we change.

Universities are means, not ends. They perform several functions: they teach, research, credential and socialise. Alternative ways of doing these things are emerging, and they don't necessarily involve universities. The digital revolution doesn't just demand that we change our delivery systems: it's forcing us to rethink teaching and learning too.

Ten years ago Mike Gallagher, then head of the Australian Government's Higher Education Division, warned that: "It is important that the hype surrounding the technology used does not obscure the importance of the pedagogy behind the teaching". Few universities appear to have taken much notice.

There are however some emerging signs of change. The Sydney conference mentioned above has three key themes: identifying workforce skills and capabilities for eLearning; building professional capability by lowering barriers to technology use; and collaborative partnerships for institutional flexibility. At least the critical issues are being talked about.

The VU eLearning Environment Review panel identified a long list of capabilities required of a new system. They all seem eminently sensible. Some telling comments from survey respondents – "I see little evidence of real blending of eLearning into our more traditional face-to-face practices" – highlight the need for teaching and learning change.

The panel acknowledges this: "If the new VU eLearning Environment is merely a technically superior version of what it replaces, it will have failed . . . . technical support must be complemented by pedagogical support that challenges the taken-for-granted and encourages new pedagogical practices that can take advantage of the technically improved environment". The panel notes that "many members of staff have limited experience of online learning and of the range of tools available". It correctly asks some basic questions like: should all classes be recorded and be available online? Should all assignments be submitted, assessed and marked electronically? Should individual schools and faculties develop their own eLearning strategies?

VU's strategic plan includes a commitment to "enable the university to implement a systematic approach to developing the range of blended delivery strategies, including eLearning, required to meet the diverse learning needs and preferences of its learners". It commits the University to develop a blended and eLearning strategy. This is linked to the wider Curriculum Review process, which is due to conclude in May 2012.

Significantly, the review panel interprets the strategic plan commitment this way: "It indicates that the University will continue to emphasise face-to-face learning but will complement this with eLearning activities". The obvious uncertainty and ambivalence in this statement highlights the challenge: a strategy plan's important, but it's what you do about it that matters.

Our people need to change . . . .

The work of universities is performed primarily by academics. Great technology is useless if academics are unwilling or unable to use it. VU is doing reasonably well investing in new technology: it's doing little to invest in the capabilities of the people who are expected to use it. Some universities seem to be doing more, but none are outstanding.

Academics won't devour new technologies like kids opening Christmas presents. Why should they? Some will feel threatened. Until recently, universities did very little to train academics how to teach. Professional development has long figured prominently in school education. It's a relatively recent innovation in academia. It's understandable that some academics will resist having their lectures recorded. Many feel heavily overloaded, and will regard engagement with new eLearning tools as just another burden they're not rewarded for undertaking. Some will worry about intellectual property rights in course materials. Others will be happy to enhance their research efforts with digital capabilities, but pay little attention to innovation in teaching.

There's nothing inherently wrong with such responses. They're natural. Universities ignore them at their peril. A university delivers educational services by combining technological and human inputs. An airline has no use for a fleet of jumbo jets if its pilots can only fly Sopwith Camels. With universally accessible digital content, teachers can no longer simply dribble discrete chunks of knowledge into previously empty student vessels. They are becoming guides, interpreters, mentors.

Swinburne University clearly understands the challenge: its joint venture with Seek is specifically focused on linking technological and pedagogical change. Schools are changing too. They're experimenting with digital assessment feedback systems, blogs, wikis and podcasts. The Khan Academy in Silicon Valley is using digital technology to reverse the traditional divide between class-work and homework. Routine learning occurs online in the home, and classes are devoted to one-on-one problem solving and mentoring.

Universities are still closer to the world of cloisters, monastic castes and academic gowns than they are to the digital world of collaborative and interactive learning. Making the transition is more about people and pedagogy than it is about technology.

. . . . because new challenges are looming.

This isn't a matter of choice for universities. It's a challenge that has to be confronted now. Because Australian higher education is about to be hit be some big structural forces that will turbo-charge digital change.

The first is the National Broadband Network.

Less than a decade ago, a Conservative Communications Minister dismissed broadband as just for pornography and video games. No-one talks like that now. The transformational impact of universal ultra high-speed broadband will be like the rollout of electricity in pre-war Australia and the construction of America's interstate highway system in the 1950s. It will change almost everything. And eLearning is on the top of everyone's list of change scenarios.

Swinburne University Deputy Vice-Chancellor Professor Shirley Leitch, who is responsible for the university's eLearning strategy, says the NBN rollout will lead to a "learning explosion". Peter Shanks of Skills Tasmania says "It will transform the way in which we teach and our students learn".

In its submission to the recent House of Representatives NBN inquiry, the University of Newcastle said "Online program delivery is still in its infancy. This is primarily due to insufficient capability within our communications network". The tone of other universities' submissions was similar. Once again, the most prominent contributors were regional universities.

Victoria University didn't make a submission. There isn't a great deal of consideration of NBN challenges and opportunities inside VU.

The second structural change is the shift to a demand-driven higher education system. No-one quite knows how this change will unfold, nor indeed how it will be funded. Enrolment numbers are increasing dramatically as universities battle for market share. Overall enrolments have increased by 16 per cent over the past three years. The VU figure is 19 per cent. With a formal government target of 40 per cent of 25-34 year-olds having bachelor degrees by 2025, that's no surprise.

Michael Ilczynski, head of education services at Seek, expects that the uncapping of places will have a big impact on demand for eLearning. Physical resources are already under pressure, so how will universities cope with a huge expansion of the system? eLearning alone won't solve the problem, because it involves a mix of reduced and increased costs, but every university will be thinking about how they better integrate their use of eLearning to help meet this challenge. The forthcoming Lomax-Smith review of base funding in higher education will undoubtedly concentrate minds in the sector even more.

The third challenge is more speculative. I think we're about to see a new kind of customer in higher education, one that's less tolerant and more demanding.

There's been a lot of debate about the nature of emerging generations in the digital era. Commentators like Donald Tapscott have built careers on breathlessly hyping the rise of "digital natives". Young people living in a new digital world are supposedly changing everything. Recent research by Gregor Kennedy and others pours some welcome cold water on these arguments. Less than 15 per cent of current students turn out to be "power users" of digital technologies in learning.

Yet I think this assessment is a little premature. It reflects the behaviour of a transitional generation, those who've grown up as the internet has evolved. The next generation will be different. The students of tomorrow will be born digital: they'll have known nothing else but the web 2.0 world. They'll want to be entertained as they learn. They'll demand instant feedback. They'll compare learning experiences with digital games and social networking sites.

I can't prove this. It's just my opinion. Yet almost every person involved in eLearning I've spoken to agrees. Kate Cornick of the Broadband Institute thinks that this new group is already hitting universities. Mark O'Rourke from VU's Curriculum Innovation Unit concurs. He's developing health and safety materials in video game format to reflect this emerging trend.

Put these three trends together and the implications are clear. More demanding customers in a more demand-driven system largely liberated from previous technological constraints. If ever there was a prescription for fundamental change in higher education, this is it.

The digital revolution is upending many things . . . .

Nothing is certain. Such trends are inherently unpredictable. There are some sobering contemporary examples we can look to for guidance. Bookshops. Newspapers. Recorded music. Movies. Travel agents. Department stores. All intermediaries one way or another involved in the information business. All experiencing wrenching change. Amazon's recent move into direct publishing shows just how vulnerable information intermediaries are.

Universities are knowledge department stores. They're sustained by scale, by brand power, by information asymmetries, and by government subsidy. Digital technologies are eating away at such bastions of intermediation everywhere.

My rhetorical question – will the internet kill universities? – may sound silly. It's not. While the formal entities will undoubtedly survive, what they do and how they do it is set to change beyond recognition.

The early symptoms of fundamental change can be seen all around us. Students are comparing online course materials before choosing universities: a young woman I work with recently chose a Deakin course ahead of Monash because of its superior online elements. Websites rating courses and lecturers are starting to appear. Open source software and Creative Commons licensing are changing the dynamics of proprietary content.

Changing workplace needs are driving online education demand. Why sign on to the inconvenience of two 5.15 lectures a week when you can do it online whenever you feel like it? Why go to the library when you can read lecture materials on your iPad on the train?

Recent reflections on the life and work of Steve Jobs contain an important message: it's all about the customer. Apple has triumphed by harnessing cutting technology to an instinctive understanding of the needs and wants of the consumer. In March this year Jobs said: "It's technology married with liberal arts, married with humanities, that yields the results that make our hearts sing".

. . . . and universities are next in line.

Australia's reliance on education exports is threatened by the growth of digital alternatives. We don't need to build vast campuses in Asian countries to export education services to their students. And those who may choose to come to Australia face an ever-growing range of physical and digital alternatives.

Australian universities face intensified competitive threats in their home markets, as the recent Laureate decision to open a business here demonstrates. The regional university model is likely to be transformed. The University of Southern Queensland is already offering ANU courses through a joint venture. The whole concept of "distance education" is set to disappear, because everyone will be doing it. OUA will have to evolve into a different organisation, as its constituent universities will do for themselves what it now does for them. Sandstone universities will continue to surf on brand power for a while, but even they are at risk of being overwhelmed by global digital competition. VU runs the risk of being caught in the middle, exposed to greater competition from regional universities spreading beyond their geographic markets but without the protection of a sandstone brand and the experience of OUA participation. North Coast Institute of TAFE Director Elizabeth McGregor says that NBN will allow the institute to compete in global training markets. Port Macquarie TAFE is thinking globally: are we?

The disaggregating power of digital technologies challenges the whole concept of a university. Melbourne University Vice-Chancellor Professor Glyn Davis points to recent research which questions whether students improve their generic skills at university. The *Economist* noted recently that "the demand for educated labour is being reconfigured by technology" as digital devices "empower amateurs to do what professionals once did". Higher education credentials will no longer necessarily guarantee higher earnings. Restricted entry to regulated professions, intimately connected with particular university courses, will be challenged.

It's now possible to study a Yale or MIT course online without enrolling or paying for it. If you visit the MIT website, you'll see that it even tells you what online interactivity options are available in each course. You pay to be assessed and credentialed.

You can access rich higher education content at Apple's iTunes U and websites like www.thegreatcourses.com at very low cost. Many VU students already do this to supplement what they get in class. The recently established University of the People in the United States is offering free courses for lower income earners that have been created by volunteer academics. The Digital Futures Institute is developing free online courses for the University of Southern Queensland, with fees payable for assessment.

These developments will attract many who might otherwise have enrolled in a traditional university course, such as early retirees looking to upgrade their knowledge and capabilities. Employers may bypass formal university credentials in some disciplines, looking beyond them to assess actual capabilities. Once learning content is transparent and universal, the gatekeeper's role is diminished.

The nature of education is changing . . . .

Interactive three-dimensional online technologies are changing education options. Situated learning theorists like Jean Lave and Etienne Wenger emphasise the importance of embedding learning in familiar contexts and media. James Gee argues that video games are an ideal vehicle for teaching. New opportunities for simulated learning experiences are now opening up.

This will shift the eLearning centre of gravity heavily towards the TAFE sector. It won't just be pilots flying in simulators and surgeons using haptic scalpels: we'll soon be teaching hairdressers wielding digital scissors and chefs using online frying pans.

Universities will routinely use online technologies to collaborate with each other across the world. Melbourne University has recently partnered with Canadian and British universities to jointly offer a masters degree focused on avian influenza.

Individual academics will become more mobile. The university is still based on the community of artisans in a craft guild model from whence it emerged many centuries ago. Star academics can use online options to leverage their brands into much more remunerative work, putting huge pressure on established pay scales. Renowned philosopher A. C. Grayling has just established the New College of the Humanities in London, offering courses in law, economics, philosophy, literature and history featuring famous academics like Richard Dawkins – for double the usual fees. The Omniacademy at Louisiana State University offers courses developed by individual academics and pays them royalties from student fees. eLearning allows star academics to participate in such ventures without ever setting foot in the countries in which they're based.

The central feature of the current wave of technological change is the triumph of mobility. The physical constraints of the teaching and learning process are already beginning to dissolve. If some senior company executives no longer have their own individual offices, why should academics be housed in their own den at a specific location? If people running major businesses do much of their work on the move, why can't teachers?

These trends are profoundly disruptive. They could promote further casualisation, undermine collegiality, broaden pay differentials, erode the nexus between research and teaching, and allow academics to promote their own courses in virtual global markets.

There are plenty of other possible shifts we can speculate about. eLearning may break down well-established time structures and rhythms in universities, like arbitrary semesters and unduly long courses. It may lead to greater monitoring of student participation in classes. It could improve access for non-English speaking background students, who can now use pause and rewind to enhance understanding. It should open up new choices for disadvantaged students like prisoners. Universally available translation software may break down language restrictions on content, and even open up opportunities for multilingual content delivery.

The transition to eLearning raises big questions about the physical makeup of institutions like Victoria University. The future of smaller campuses, particularly in the face of huge population growth in Melbourne's west and north-west, may look different. The pressure on student housing in inner Melbourne could ease. The entire notion of a university campus as a discrete enclave could disappear.

By now, you're probably thinking that I am drifting off into the realms of science fiction. And it's wise to inject a few cautionary notes.

eLearning is not a cost solution. As private provider Andrew Webb comments: "to do eLearning well is very expensive, and to do it badly is very cheap". While the benefits of scale and reduced pressure on physical resources are potentially enormous, there are also major indirect costs. Bandwidth isn't free, and the most innovative applications use lots of it. As Kate Cornick asks: who will pay? The student? The university? The government? That's why a research team she's part of is now exploring the prospect of universities becoming Internet Service Providers.

More collaboration and interactivity means more teacher time, some of it in unsocial hours, which means more cost. Exploiting the benefits of eLearning 2.0 means more human input. It means rethinking how we utilise scarce face-to-face learning time.

It's easy for large institutions with big budgets to be seduced by hype and gimmicks when they confront technological change. We have to avoid clunkiness, but that's no excuse for gold-plating. Capability must be built carefully, with lots of scope for learning from actual experience. Glitzy gimmicks and expensive marketing are of limited value. It's getting the overall product right that matters. It will probably be a while before we see entire courses delivered on Twitter.

. . . . and adapting won't be easy.

So in this world of awesome threats and opportunities, what should VU do?

A good conceptual starting point lies in Johan Ismail's "Design of an eLearning system: Beyond the hype", published almost a decade ago. We need an overarching eLearning strategy based on a common vision, governing principles, compelling content, staff support and good technology. Too much emphasis on technological solutions at the expense of people development will lead to "expensive software implementations essentially unused by uninformed, fearful and resentful employees". This is excellent advice.

What might some of the features of such a strategy look like?

A commitment to put the core elements of every unit and lecture online by a specific target date. More experimentation with learning immersed in the community. Gradual redesign of course content to adapt it to blended delivery. Serious investment in staff capability. Incorporation of digital productivity issues in enterprise bargaining with staff. Innovative proposals to governments for eLearning projects.

Answering the questions that these thoughts raise won't be easy. Ignoring them isn't an option. eLearning isn't just a neatly packaged little piece of the university's future: it *is* the future. In fact, the term "eLearning" is probably bound to disappear shortly after we hear the last of "distance education". In the long run, I think we'll conclude that Bill Gates was being a little alarmist in suggesting that universities may die. But I think it will be a close-run thing. The university of tomorrow is going to look very different from today's model. If we don't set about building it now, the university of tomorrow may not be a university at all.

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