

## **Why universities don't just need more innovation – but also more of a system for making the most of the best ideas**

By Geoff Mulgan

Universities are in the midst of an extraordinary global boom – with rapidly rising numbers of students (150m plus), a surge of investment in buildings to house them, soaring salaries for the leaders and feverish [global competition](#) to attract the best and the brightest. At first glance, too, universities appear to be going through a boom in innovation – with MOOCs of all kinds, from iTunesU and Coursera to Futurelearn, new financing models, labs and partnerships.

But if you look closer you find a paradox. Universities are centres for research on many topics, and in some cases for research and development. Yet the paradox is that although universities are very good at applying the principles of R&D to other fields, there appears to be little if any systematic R&D done on the activities of universities themselves. The problem is partly that universities aren't innovating enough; but, if anything, the even more fundamental problem is that the ways in which they innovate are often flawed: too scattergun and evidence-free. The very qualities which mark out the very best and most prestigious disciplines of the modern era are often missing when it comes to the ways in which universities think about themselves. The result is that if an academic comes up with a brilliant new method for research or teaching it can be a matter of chance as to whether the method spreads.

Of course, every university worth its salt can point to imaginative programmes that are trying out new methods of teaching, student involvement in the community or interdisciplinary work. There are also plenty of creative university strategies – Western Governors, Olin and Arizona State in the US; Exeter, Coventry, Imperial and Warwick in the UK; Aalto in Finland; Melbourne in Australia; Nanyang in Singapore; or Postech in Korea are just a few examples of many. But the overall picture is of remarkable conservatism: relatively fixed formats for courses, research and roles, and a culture which is surprisingly slow to adopt ideas from elsewhere.

Some of the reasons for this institutional conservatism aren't hard to see. Higher education institutions almost never close down, however poorly they perform. So the creative destruction that creates space for new ideas in fields like business, or politics, or even with particular disciplines, simply doesn't happen in universities. Then there's the inertia of prestige and reputation. Most of the top universities now were top universities a generation ago. They benefit the most from donations and endowments, and they're most likely to attract the best professors or students. That gives incumbents some powerful advantages. How well they did a few decades ago may count for as

much as how well they do today. Add to these governance models that discourage risk-taking; and powerful disciplines, many rooted in the 19<sup>th</sup> century, that monopolise power and prestige (helped by strong incentives for academics to publish in well-established journals in well-established disciplines), and it's not surprising that universities are much less cauldrons of creativity than they could be.

This conservatism may explain why, much more than in other fields, in higher education most newcomers are set up as imitators of the old rather than with radically new approaches. Although there have been some moves for universities to become more [more differentiated](#), specialising in research, or teaching or community links, most look pretty similar. There are a few exceptions – like BPP, the private university in the UK; Shantou in China; the Earth Institute in Puerto Rico; and Aalto in Finland. The University of Phoenix showed that some higher education could be turned into an industrial commodity, produced in tightly managed production lines, distributed through retail outlets, and providing qualifications at much lower cost than the alternatives. But these stand out precisely because they are so exceptional. Similarly, the Open University's Institute of Educational Technology and its precursors remain almost unique as an overt R&D function within a university, set up to develop new technological tools to help the OU do its job.

There are plenty of counter-examples, relatively new institutions that have fought their way up the league tables; and there has been plenty of imaginative innovation within the oldest universities. But the bigger picture is one in which the brainpower of hundreds of thousands of very clever people simply isn't being well enough orchestrated to creating the future.

So part of the problem is undoubtedly an insufficiency of creative experiment. But it's arguable that the bigger problem is that, even when there is experiment and innovation, what's missing is the system: the orchestrated experimentation which we recognise as key to successful R&D; the openness to ideas and entrants from outside that is, again, characteristic of most really innovative fields; and systematic evaluation of which innovations do and don't work. In short, universities do R&D on everything else but not on themselves. They experiment with new ways of creating knowledge or teaching but don't do so systematically, or with effective synthesis of knowledge, in the way that happens in fields like biotechnology, medicine or computing.

So does this matter? One response of course is that 'if it aint broke, don't fix it'. UK universities are doing well in global rankings, and they are full of creative academics and managers. So why do we need to change direction? The answer, surely, is that in any globally competitive field failure to innovate soon leads to failure. If you aren't systematically developing the methods that may be

mainstream in a few decades time, you are far more at risk of becoming irrelevant, or overtaken by others.

Another response is that universities have been bombarded with new ideas from outside, as well as threats to their finances and status: the last thing they need is even more. It's true that UK higher education has been through a lot of change, most of it imposed, and not much of it based on evidence. But the excesses of top-down change highlight even more the need for an approach to innovation that is more open, more deliberately experimental but also more systematic and more attuned to evidence.

None of this means that everyone should innovate all the time. On the contrary, most people, most of the time, should be using tried and tested methods. But it does mean that a minority should be given the means, and the freedom, to experiment.

So what of MOOCs, which might appear to be a contrary example, a dramatic new wave of innovation which will sweep away the old order? They certainly are a sign of restless experimentation, and of new ideas coming in from outside. But I would argue that on closer inspection they turn out to be as much symptoms of the problem as answers to it – yet another reminder that when there is innovation, too much of it is badly managed and misconceived. Internet technologies are likely to transform how universities work, making possible more user pull, peer to peer learning as well as targeting of specialist but dispersed groups of students and researchers. But the remarkable thing about MOOCs is that they have largely ignored decades of experience of what actually works in learning and technology, and are failing in predictable and predicted ways. The world's innovators in distance learning – from Canada to Russia to the Open University – found ways to dramatically widen access to learning, and experimented with all sorts of hybrids, with tutors and summer schools, peer support and high production value content. Again and again they learned that purely online learning requires very high levels of motivation and persistence, and that most learners, most of the time, need online materials to be complemented by direct interaction with a tutor or coach, and the encouragement of a circle of peers. Yet lessons of this kind were largely ignored by the designers of MOOCs. Nor was very much systematic R&D done to improve their designs - instead they jumped to models that appeared plausible.

Some of the mistakes can be attributed to the naivety of the computer scientists and venture capitalists who have made much of the running, and this may not matter much, except to investors who will lose their money. The best funded ones may fight their way through to significant impact

(I'm still, for example, on balance persuaded by the virtues of the Khan Academy), or they may succeed as perfectly benign marketing tools for the most established universities.

But the very mixed experience of MOOCs so far confirms the absence of a properly functioning innovation system: it shows that there is little serious orchestration of institutional memory; little systematic R&D into how different variants of MOOC could work; and no well informed source of funding and investment to support the growth of models that really do deserve to spread.

So what needs to be done? The possible building blocks of a more developed innovation system aren't hard to describe, and mirror what is found in some other fields. Essentially they boil down to funding flows, people, institutions and processes devoted to the three components of any mature innovation system: discovery and experiment, evaluation, and then diffusion. What, then, would that mean in practice?

First, there's a need for funding streams to support experiments which address how the key elements of the university could work better: knowledge generation, discipline formation, skills transmission, social network forming, connected economic development, preferably in ways that can support outsiders as well as insiders with promising ideas. We might expect some of these to focus on such things as emerging disciplines, from computational social science to social epigenetics. Others might address new ways of thinking and learning – like 'studio' methods of working around problem solving in teams, with real life partners (as pioneered by Aalto); the new methods of knowledge generation coming from the open science movement; the new ways of turning knowledge into useful forms such as labs and accelerators; new ways of keeping costs down (like South Africa's CIDA); or new ways of rethinking the role of the university in relation to life-stage stage, like the ALI at Harvard or the U3A.

One of the most exciting projects I'm involved in involves one of China's very top universities creating a programme for undergraduates and graduates with a high proportion of the curriculum organised around real life problem solving and open science – with the aim of cultivating qualities of creative entrepreneurship as much as knowledge transfer. This is a good example of the kind of radical innovation that's needed. It may not succeed, and so is rightly being trialled on a relatively small scale. But, if it is successful, it will have profound implications for how higher education might be organised in the future.

Second, we need 'what works' centres – dedicated to synthesising knowledge about what works, making sense of experiments, and working with sufficient flexibility to judge innovations according to the very wide range of purposes which may exist in a university. These should cover not only

those aspects of higher education which are about the transfer of knowledge, but also those aspects which are about shaping people, or about changing the world. Crucially, any such centres need to be independent and strong enough to challenge powerful institutions, and to speak out when the emperor isn't wearing any clothes.

Third, we need better diffusion mechanisms – incorporating both the promising ideas and the state of evidence into training and formation for lecturers, professors and researchers, who are currently assumed to absorb what's known by osmosis.

Finally, and perhaps underpinning all of this, we need means of cultivating a cadre of leaders across universities with the confidence and skill to experiment and innovate.

We don't start with a blank slate. As well as the many universities doing innovation of their own, there are also research bases on which to build – such as the International Centre for Higher Education Management at Bath; the Centre for Higher Education and Equity Research at Sussex, the Centre for Higher Education Research at St Andrews, and the Centre for Higher Education Studies at the Institute of Education. But none of these yet sees its role as being a knowledge intermediary – a source of guidance on effectiveness, though they could evolve in that direction (and there are some moves in sight from the ESRC).

A recent book co-authored by Clayton Christensen - [‘The Innovative University: Changing the DNA of Higher Education from the Inside Out’](#) unintentionally shows the depth of the problem. Christensen is a good writer and thinker, whose most famous idea – disruptive innovation – is broadly sound. Yet it can't be a coincidence that this is his weakest book. It offers interesting accounts of the history of two US universities, but struggles to address basic questions about what universities are or should be for. It only discusses innovation in relation to teaching; and it simply doesn't mention the great majority of recent innovations, bar a handful of examples from US universities. Crucially, it has literally nothing to say about how higher education could become more systematic in its innovation. It's hard to imagine a book with the title 'innovation in healthcare', or 'innovation in retail', being quite so thin in its references or its intellectual ambition. Yet the authors' excuse is probably that, unlike in these other fields, there is very little literature to build on.

Governments have in the past worried about driving up R&D in important sectors – from the car industry to aerospace. Often their capacity to act has been limited, and most of the action has been in the control of private businesses. Universities, by contrast, are heavily shaped by government - funded, regulated and incentivised for better or worse through decisions made by policy-makers. There are good reasons why the primary concern of policy-makers in recent years has been how to

reconcile expanding access with containing costs. But seen in the long term, innovation should matter just as much. Twenty years ago, I commissioned a [report](#) on universities for the thinktank Demos which suggested that perhaps every year or so one of the poorest performers might be shut down, and the resources freed up for a new university, the only proviso being that it should offer some significant improvement on existing ones. Of course that never happened, and was greeted with laughter by one universities minister when I suggested it to him (though he just spluttered when I asked him why what worked well for businesses, political parties and schools had no place in higher education). The usual response is that any such 'creative destruction' would be unfair on the students who would need to be moved to another institution. Yet it happens all the time in schools, and in the workforce. I'm sure there may be better ways of achieving the same result. But let's at least have a serious debate about what the options are. And let's at least apply the best of the university method – of knowledge-based inquiry and experiment – to the university itself.

A final crucial point is that any serious programme for innovation in universities can't avoid the question of purpose. Innovation is never a good in itself. Innovations can be good and they can be bad. Radical innovation inevitably raises questions about what universities should be for. As teachers, are they primarily playing a role of signalling, or are they actually providing their graduates with the knowledge and capabilities they need? How much should they be thought of as servants of the economy, and how much as spaces for critical reflection on how power and money are organised, and how they could be organised differently? How much should we think of them as citadels, guardians of virtue and knowledge in a sea of ignorance, and how much should we think of them as embedded in communities?

My own view is that we need innovation that reinforces the best ethos of universities, reenergising their role as servants of society rather than separate, self-serving institutions. The greatest periods of reform in the past were always informed by a strong sense of mission – spreading knowledge, opening up society, widening opportunities. Now too the challenges of the 21<sup>st</sup> century don't just need better informed graduates – they demand graduates ready to act with the combination of ethics, capability and knowhow.