Rethinking science in the 21st Century: Universities need to be meadows

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Historically universities have played a unique role in society. As institutions they are inimitably placed to bring insight and capabilities from across a broad range of disciplines to contribute significantly to their locale, and to the world's largest and most significant and impactful challenges - whether that is environmental sustainability, transforming healthcare and education, or building a future that is more equitable. Universities are distinct from other sectors (even those that undertake research and learning activities), in the way that they can explore topics, make discoveries and offer perspectives and insight in the immediate and longer term.

It is possible to argue that now, perhaps more than ever before, we need to ensure that universities are able to continue to offer cutting edge and pioneering insights across the sciences, social science, engineering and arts and humanities in ways that engage meaningfully with government, industry, business and the third sector. Yet concerns about the sustainability of universities globally are growing. The immediately presenting symptoms of what is increasingly being referred to as a 'crisis' are varied. Yet, the symptoms often appear to be derived from issues such as democratization, marketization, meritocracy and freedom of speech, as well as the associated questions raised over the forms of value that universities bring to society, as well as the mechanisms for funding their endeavours. In the UK, it is possible to observe the cracks from decades of research and learning activities that are not fully resourced. Partial funding has led to a financial model that is increasingly less resilient to shocks and is less able to be agile and responsive to societal challenges that are evolving at increasing pace.

On this current trajectory universities may lose their unique capacities and their position as part of the broad global ecosystem of innovation and development.

We need a global university renaissance.

The world is experiencing a time of rapid change. New technologies are disrupting the status quo in every sector. Citizens are facing significant uncertainty in terms of what the future is going to look like and what their role in that future is going to be. It is in this moment that we need to recover the distinctive role of universities in society. We need to ensure that it is possible for universities to continue to produce knowledge and deep insights in disciplines and at their intersections. This knowledge and insight needs to be accessible, created in ways that are responsive to societies and communities, and also infused into leadership and governance. This requires a global renaissance – a revisiting of the unique and complementary role universities can play, and a commitment to ensuring that universities (their people and infrastructures) are on a sustainable footing, and able to contribute their unique offer to society.

The challenge faced by universities.

The social contract of science was first articulated by Vannevar Bush in 1945. Generally speaking, this 'contract' was originally envisaged as one where universities receive funding and autonomy in exchange for beneficial discoveries and outcomes from science for society.

In recent years it is possible to see that this has evolved toward a 'contract' that has a more 'customer-contractor' relationship at its core. As a result, universities are increasingly framing their value in terms of the financial contribution made to a country's GDP, and research and teaching activities have become more governed by their financial viability. Sources of research funding are often aligned to government priorities. This can create a hierarchy of priorities, and a tendency to reward narrow specialism as well as research that is lower risk and likely to deliver tangible outcomes to current needs in shorter timeframes. Consequently, disciplinary silos persist, multidisciplinary work is encouraged in applied disciplines such as medicine and engineering, but interdisciplinary approaches, where there is exploration and synthesis of insights at the intersections of disciplines, are often undervalued and under resourced. Indeed, competition is often incentivised over collaboration which can compound the siloed nature of academic institutions and the lack of porous boundaries between universities and other sectors.

To retain the unique and complementary contributions that universities can make, we need to embrace the metaphor of the university and society as a series of interconnected meadows.

The metaphor of a meadow

Imagine a beautiful meadow. As you survey that meadow there are lots of different plants and flowers, and it is a landscape that changes through the seasons and evolves over the years. As you look across that meadow you become aware of the song of the birds and the hum and the buzz of the animals and insects that are all part of this thriving ecosystem. Bees are critical to the survival and sustainability of this ecosystem as they travel from plant to plant, collecting pollen and cross pollinating as they go, as well as creating 'highways' connecting different meadows to each other.

How does the meadow as a metaphor help us achieve a renaissance?

Universities are able to bring together a broad range of disciplines, perspectives and insights as a lively (proverbial) diverse meadow. When we envisage universities as a series of connected meadows (in the context of a broader global ecological system that incorporates meadows of government, business, industry and the third sector), we can see the value of diversity and synergy that underpins a sustainable and thriving ecosystem. The importance of infrastructures that foster interconnectivity also becomes clear. This interconnectivity is threefold; porosity between disciplines within academia; symbiosis between the core strands of work within the university (research, teaching and knowledge exchange); and collaborations across disciplines, between institutions and across sectors.

Each meadow is reliant on the cross pollinators, so it is not just about having infrastructures in place that create pathways to allow genuine bridges between disciplines. It is critical to invest in people, enabling both specialists and expert generalists to work together. Investing in people at every career stage within the university system, investing across the diversity of roles and responsibilities, and creating different pathways for growth and progression is what will create the hum and buzz of a thriving and sustainable connected and thriving meadow.

Some species of bee are honeybees. Honeybees are not only cross pollinators but also transform pollen into honey. For universities to have ongoing impact there is a need to not only enable the application of the insights developed within universities, but also to foster opportunities for synthesis work to happen. This is the work that brings together insights from across the disciplines, and from other sectors, that leads to transformative insights and concepts that result in innovation and breakthroughs. In the university there needs to be the capacity to value academic freedom, critical thinking, creativity, conversation and storytelling which all contribute to the synthesis of proverbial pollen into honey. This is a challenge. These activities are difficult to justify on a time sheet, difficult to cost and demonstrate financial value in the shorter term, difficult to evaluate on a promotion framework, and certainly do not generally fit into a traditional timetable. It is however, possible to argue that they are profoundly necessary for a thriving meadow ecosystem that brings benefit within and beyond its (porous) borders.

Summary

As thriving meadows, universities can retain their unique offer to the world. They can remain places of discovery and learning, places capable of doing the extraordinary work of holistic thinking that is needed to build a positive future. Addressing complex local or large-scale challenges almost always requires a bringing together of understanding of technologies, economic system(s), individual and corporate human behaviour, and narratives of value. Weaving these together takes a distinctive ecosystem. It needs scope to explore intersections, a degree of redundancy in the system, tolerance of failure, and space for serendipity. This will arguably require new relationships, social dynamics, and processes (including funding models) to the ones in place today.

However, the prize is significant. If universities can recapture their purpose and capability to be places that foster and nurture creative, holistic and diverse thinking as part of a proverbial meadow, it is possible to imagine a universities ecosystem that is systematically resilient and agile. In that context, universities will be a critical part of the solutions to the environmental and societal challenges we face, as well as being part of raising up the next generation of critical thinkers, innovators and changemakers who will carry that torch into the future.