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Growth at Any Cost

The Implications of the Current Business-Driven Model in Australian Universities

John H Howard, August 2024

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ABSTRACT

The Australian university sector is increasingly driven by a business-oriented model focused on financial growth through student enrolments (Effective Full-time Student Load, EFTSL), particularly international students, and research income. This growth-centric approach has led universities to prioritise financial metrics such as operating margins and EBITDA, often at the expense of long-term academic and societal goals.

The reliance on international students for income, particularly among the major research universities, driven by global rankings and publication outputs, has shifted them away from their broader missions of high-quality teaching and learning, raising concerns about their social responsibility and academic integrity.

The Paper highlights the sector's difficulty in effectively planning for the longer term, with an over-reliance on government grants and policy settings that are subject to volatile fluctuation. Additionally, the emphasis on publication quantity, particularly in empirical research, has led to a decline in theory-building and groundbreaking scientific discoveries.

Government and industry have pressured universities to prioritise applied research with immediate commercial outcomes, further marginalising basic research crucial for long-term innovation.

Ironically, this shift has weakened the relevance of academic research to industry and government, as universities produce narrowly focused studies that lack the depth and interdisciplinary approach needed to address complex industrial and real-world challenges.

The Paper calls for rebalancing priorities, advocating for a research ecosystem that values basic and applied research to sustain long-term societal and economic benefits.

THE PROBLEM

Universities want to be big and even more academic

The Australian university business model is driven by a fixation with growth—growth in income and assets generated principally by growth in students and research income. Some income growth is generated from donations and bequests (notably in the health area), royalties, income from properties (including car parks), returns on financial investments, and a small amount from entrepreneurial activities—but Australian universities have demonstrated that they have not been good at running what should be core ancillary businesses, such as publishing or bookshops.

Income and asset growth mean greater eminence and prestige, with the ability to appoint top faculty and attract top students, build bigger and better facilities, and pay higher salaries for Presidents (Vice-Chancellors) and their executive teams. In 2023, Australian universities generated $39 billion in revenues, equating to 2.3% of GDP. Three universities, Sydney, Melbourne, and Monash, each generated more than $3 billion in revenue, and eleven more generated incomes over $1 billion.

In a financial sense, universities are public corporations (created by government statute) and effectively operate as government business enterprises. This is driven by a requirement to comply with financial accounting standards and monitoring by government Auditors General.

In this regard, key metrics are operating margins and earnings before interest, taxation, depreciation, and amortisation (EBITDA). The operating margin benchmark appears to be 6%, and the EBITA metric is around 10%. The focus on these and other metrics will intensify as more people with business backgrounds are appointed to university governing bodies.

Large university business enterprises may not be what society wants. Still, the requirement to operate and report within a framework of commercial accounting standards and metrics makes an obsession with growth inevitable.

Universities find it hard to plan and diversify revenue sources

Notwithstanding the goal of growth, the constitutional, legislative and policy instruments governing university funding in Australia constrain the capacity of universities to plan effectively. In this environment, they default to finding the easiest ways to supplement revenues, which has turned out to be the international student market. However, This Paper argues that the reliance on international student revenues has consequences for how research is undertaken.

Planning constraints arise from short-term funding cycles, policy shifts and legislative changes, increasing regulatory interventions, political influences, and an overreliance on Commonwealth funding. Universities have found it difficult to mitigate these constraints.

The higher education sector has grown predominantly through government grants, which can fluctuate wildly from year to year, particularly over the last ten years. These fluctuations reflect, in large part, the Government's dual responsibility to fund programs and its responsibility for public expenditure management and control as a key element in fiscal policy. Universities have very little influence over the amplitude of these fluctuations.

Universities have always found it difficult to operate in this environment, including the financial risks of assuming that funding commitments, once made, will stick. For example, universities should not have been surprised when the Abbott government reneged on a promise of no cuts to universities in 2013 (after the Commission of Audit Report) and the final abandonment of the demand-driven funding in 2017. Even when it was announced in 2008, those experienced in

public finance knew it was fiscally unsustainable, with the only surprise being that it lasted as long as it did.

Based on publicly available material, few universities seem to plan effectively and have developed the necessary financial modelling and strategic planning instruments. AI and analytics can enable sophisticated data-driven modelling to simulate different policy and financial scenarios and assess the impact of various factors, such as changes in government funding, shifts in student enrolment, or economic downturns.

Most universities have a strategic planning horizon of five years, but very few have a horizon of ten or more. The future is always contingent, particularly with the Government continually changing funding and policy settings. Flexible and adaptive strategic plans can allow universities to respond to changes in the policy and funding environment without compromising long-term objectives.

Financial risks can, of course, be mitigated. Several universities used the revenue boost from the demand-driven system and, more recently, from international students, to build financial buffers through investments in financial assets, which currently stand at $18 billion, up from $9 billion in 2015.

Nonetheless, there is an embedded culture within the university sector of lobbying the Government for more money. However, this has run into a brick wall as the Government juggles other priorities and a structural deficit. Universities will increasingly have to create their futures, preferably in partnership with the Government, industry, and the community.

In that context, and unlike their US counterparts, Australian universities are not very entrepreneurial—despite government exhortations many years ago and a substantial amount of material from US universities, such as Harvard President Derek Bok's *Universities in the Marketplace* (Bok, 2009) and Michigan President's *A University for the 21st Century* (Duderstadt, 2000).

Entrepreneurship goes a lot further than research commercialisation. There have been some successes in new business creation and innovation by using assets in new ways to create value. For example, in 2008, 53% of Melbourne IVF was sold by Monash to ABN Amro for $200 million.

Several universities have implemented ambitious campus development plans, many involving project partnerships with government and business.

University involvement in innovation districts and precincts, particularly if they own the land, is fertile ground for developing public-private partnerships. However, these initiatives involve detailed planning and long-term commitment by all parties, which is hard to do—but not impossible.

The Perilous Dependency on International Student Income

Reliance on international student income has shifted attention away from the imperative conveyed by governments 20 years ago to diversify their revenue sources. Research-intensive universities have preferred to use this easy-access finance to focus on research that results in scholarly publication.

As a marginal addition to the revenue base 20 years ago, policymakers and the community took little notice of the trend set in train. But now, as international student income reaches over 26% of total university income (2023), having more than doubled from 12.2% in 2002, there is a concern that the trend has gone too far in shifting their mission from their social license. However, for many smaller universities, modest levels of international student income remains vital for their ongoing sustainability.

For the research-intensive universities, international student income is driven by international student recruitment, which is driven by a university's brand, eminence, and standing, which is turn driven by global rankings, which is in turn driven by publications and citations created by academic staff incentivised and rewarded for publication output—what the financial sector would call a Ponzi Scheme.

Several other countries have followed this path, including Canada, the UK, and some US universities. However, Australia has the highest proportion of ranked universities in the world. The German system is set up differently, and the universities tend not to bother about rankings.

Global university rankings significantly impact institutional behaviour. These rankings, which are heavily weighted towards research output and citations, incentivise universities to prioritise publication quantity (Hazelkorn, 2015), principally in journal articles. The focus on quantity drives academics to produce large volumes of narrowly focused empiricist research. These articles are easier to publish and require less development than theoretically innovative or groundbreaking studies (McGrail, Rickard, & Jones, 2006).

Researchers are often incentivised, through tenure and promotion prospects, to produce a target number of journal articles and eschew writing scholarly books. This pressure to publish can lead to a proliferation of studies that, while appearing to be methodologically sound, contribute little to the advancement of theory or the development of transformative ideas.

Successive Ministers have said that they don't like the model but have been unwilling to do much about it—except recently, in what appears to be a very ham-fisted approach to control the flow of international students through visa restrictions. However, universities did not collectively manage the flow themselves, although they should have been aware of the implications for migration policy.

There is a certain irony in this: as universities chase more money to put into research by recruiting international students, the growth in resulting publications is characterised by narrowly focused, mass-produced empiricist materiel, which distracts from commitment to theory-building and breakthrough science and weakens their relevance to industry, government, and society.

CONSEQUENCES

Competition among universities

Under the growth mindset of most universities, competition for a decreasing level of government funding, particularly for research, is intense. The big research-intensive universities exercise considerable market power, particularly in access to research funding. That market power has enabled these universities to dominate the international student market.

The competition among the 33 universities outside this group has led to what the Chief Scientist has referred to as the "vegemite problem," where very limited and declining resources are spread very thinly. To address this, at least one approach is to encourage small and regional universities to collaborate through a "Research System" to build research scale and critical mass in areas where distinctive capabilities can be captured.

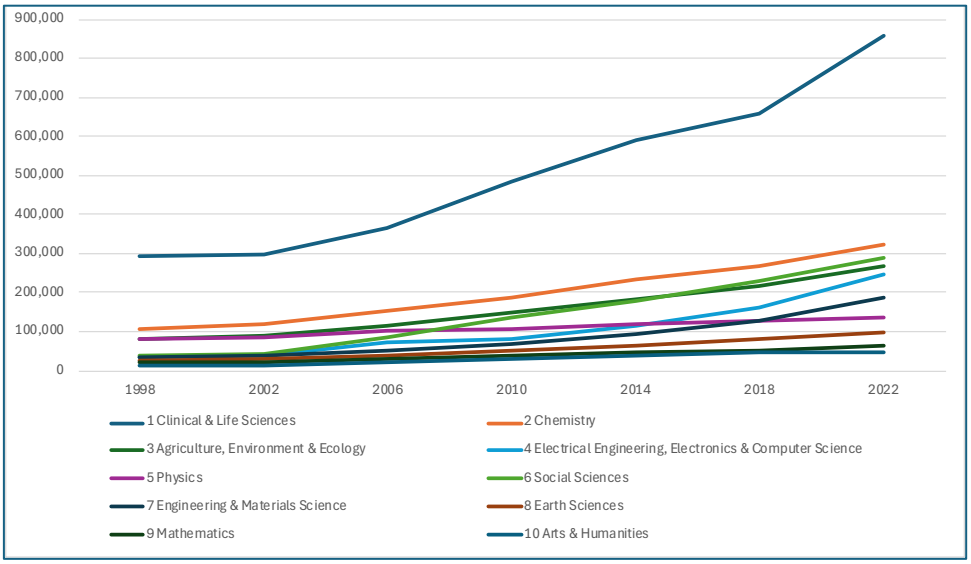
This could be piloted in Agricultural Research in non-metropolitan universities, where small universities have strengths in several fields but are not able to leverage them to achieve sustainable world recognition.

Empiricism and micro theory

Studies have shown that the pressure to publish frequently can lead to the proliferation of 'least publishable units'—small, incremental (micro) studies that add little to the broader theoretical understanding of a field (Fanelli, 2010). This output is often data-rich but narrowly focused, and the findings may be false as publication pressures incentivise cutting corners in methodology and theory (Ioannidis, 2005).

Nonetheless, over the last twenty years, there has been a massive growth in journal articles and a decline in the publication of scholarly books, which may reflect more curiosity and deeper inquiry. Between 2002 and 2022, the number of journal articles in the InCites Web of Science database increased more than threefold—from 724,202 to 2,517,264. Trends are shown in Figure 1.

Figure 1: Output of Journal Articles 1998-2022
Web of Science Documents – All Countries

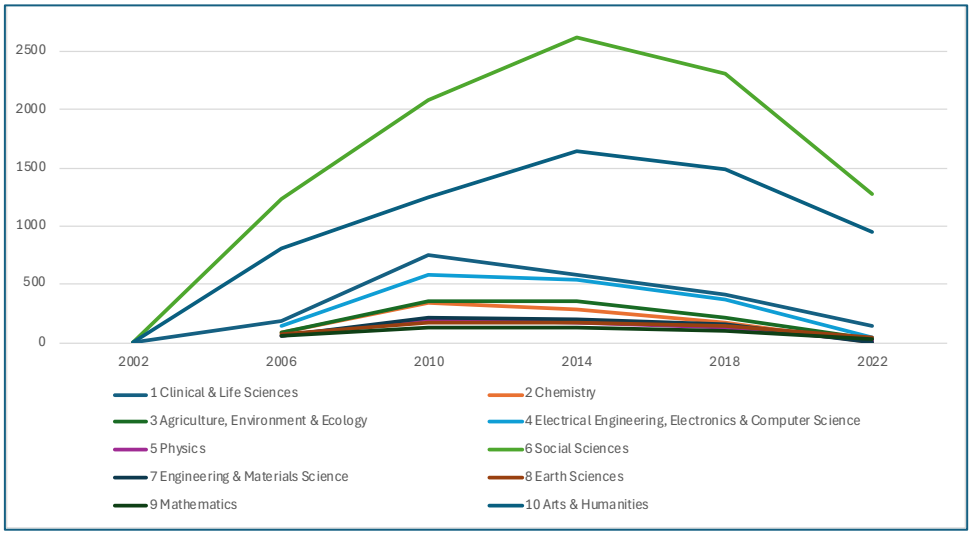


The output trends are dominated by the Clinical and Life Sciences (where output increased from 291,250 to 858,090). However, output in the Social Sciences increased sevenfold over the period, sixfold in Electrical Engineering, Electronics, and Computer Science, and fivefold in Engineering and Materials Science.

A large proportion of the output is delivered by PhD students and early career researchers, who work on programs in established organisational units rather than having the opportunity to start research in new and potentially groundbreaking fields. The process encourages incremental science rather than the development of new foundational knowledge.

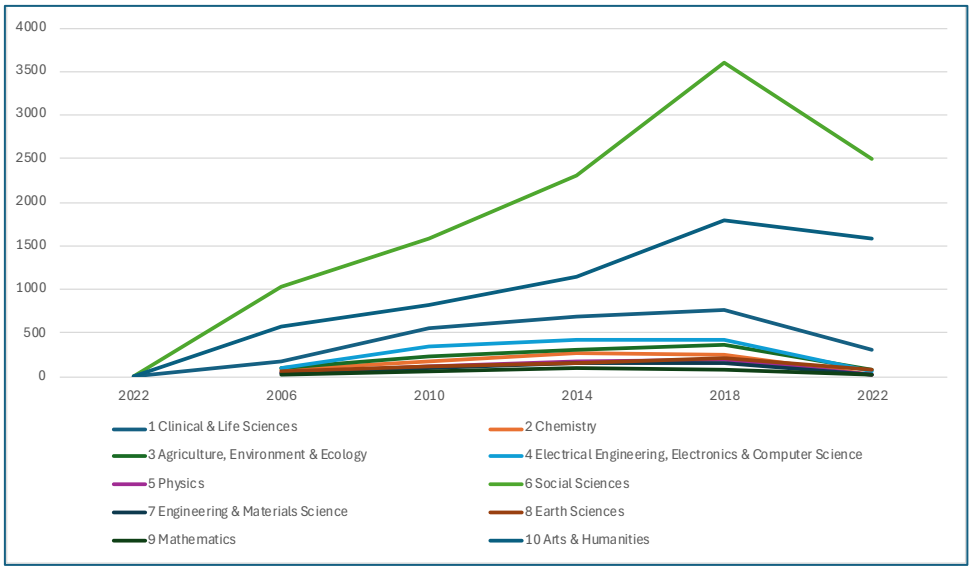
The output of scholarly books shows a different pattern: an increase from 2002 and a substantial fall from 2014. The trends have been most volatile in the Social Sciences and the Arts and Humanities, as shown in Figure 2.

Figure 2: Output of Scholarly Books 1998-2022
Web of Science Documents – All Countries



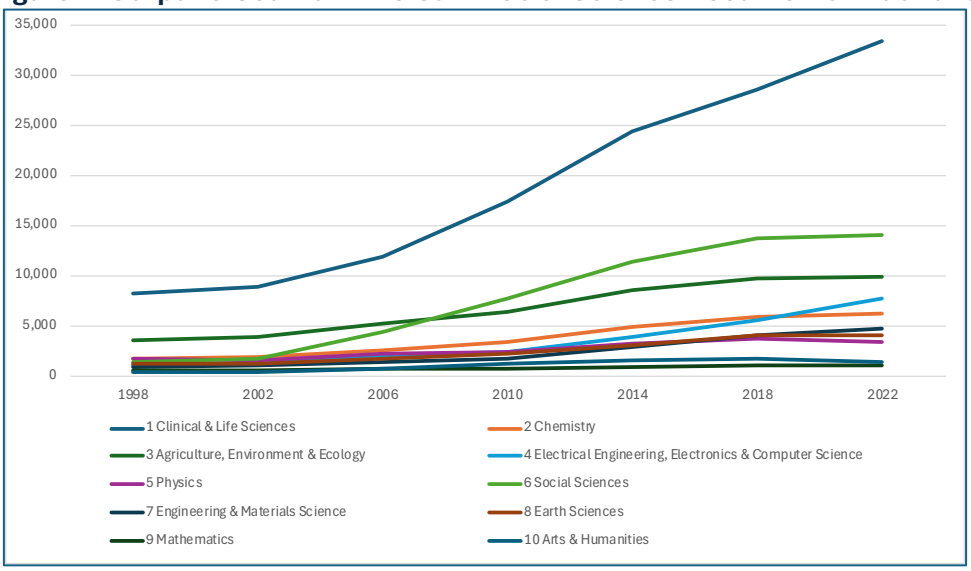
There was a growth pattern in the output of book chapters in edited books until 2018, although COVID may have influenced output in 2022, as shown in Figure 3.

Figure 3: Output of Book Chapters 1998-2022
Web of Science Documents – All Countries



The increase in Journal article output has been particularly impressive in Australia. Between 2002 and 2022, the number of journal articles in the InCites Web of Science database increased fourfold – from 21,790 to 85,607. Trends are shown in Figure 4.

Figure 4: Output of Journal Articles – Web of Science Documents - Australia



The Clinical & Life Sciences discipline dominates overall publication output (from 8,791 to 33,342). The increase in the social sciences discipline has been ninefold (from 1,596 to 14,046), sevenfold in Electrical Engineering, Electronics & Computer Science (from 1,119 to 7,651), and fivefold in Engineering & Materials Science (1,013 to 4,662).

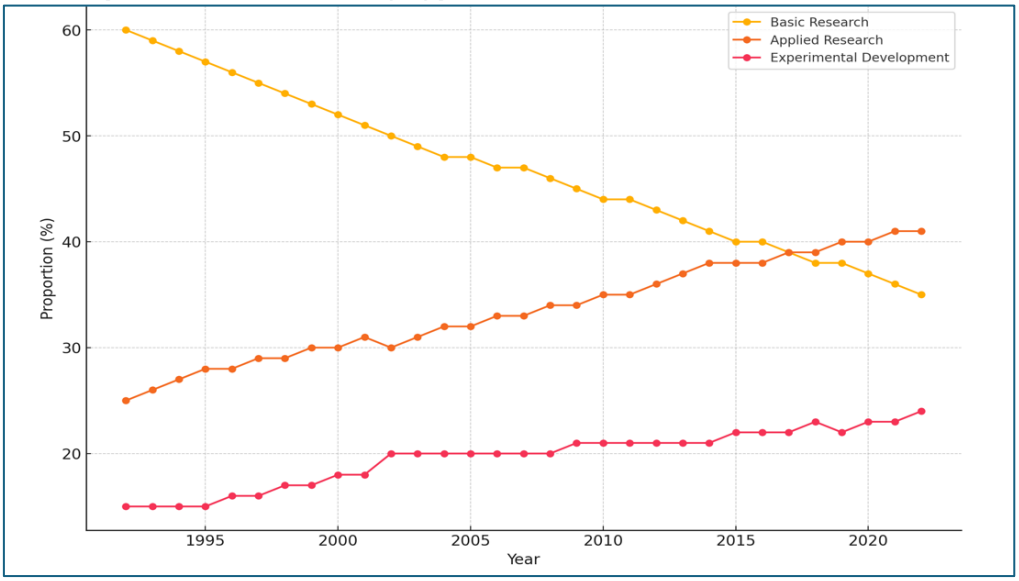
Australia produces very few scholarly books and edited volumes, with most researchers seeming to prefer to work with overseas publishers.

The shift from basic to applied research

Universities are the major players in Australia's public research effort. Other public research organisations, such as CSIRO, DST and ANSTO, contribute only a small amount.

Associated with the abovementioned issues, there has been a marked shift over the last 30 years towards applied research and experimental development and away from basic research. This trend aligns with a populist push from Government and industry for research to deliver more immediate societal and economic benefits. The trends are shown in Figure 5.

Figure 5: Proportion of Research by Type of Research: Universities and PROs, Australia



Note: Figure has been created by Generative AI based on available data from key sources such as the Australian Bureau of Statistics (ABS), Department of Education, and Australian Research Council (ARC) reports.

The decline in the proportion of basic research from 60% in 1992 to 35% in 2022 has had devastating consequences for the country's ability to produce breakthrough scientific discoveries.

Contrary to the thrust of Government and industry pressures, basic research is the bedrock of innovation, and its reduction inevitably leads to fewer transformative breakthroughs, a shift towards incremental innovation, and a weakening of Australia's global research standing.

Furthermore, the decline in basic research impacts industrial R&D by reducing the flow of foundational knowledge that fuels technological innovation. This, in turn, constrains Australia's long-term competitiveness in high-tech industries and economic growth.

To mitigate these risks, Australia must balance basic and applied research, ensuring that while short-term and commercial objectives are met, pursuing fundamental scientific knowledge remains a priority.

This balance is crucial for sustaining a vibrant research ecosystem that can generate immediate and long-term benefits for society and the economy.

Collapse of theory-building and breakthrough science

Theory-building and breakthrough science are foundational to the advancement of knowledge and innovation. It involves the development of new frameworks and paradigms that can explain complex phenomena (Kuhn, 1962). However, the current research environment in universities may no longer be conducive to these endeavours.

While incremental and empiricist research is valuable, its dominance can marginalise theoretical work, often more challenging and less likely to yield immediate publication results. This shift can result in a research landscape where the most pressing theoretical questions remain underexplored, and the potential for breakthrough science is diminished (Mingers & Willcocks, 2014).

This marginalisation is compounded by funding agencies that favour data-driven, empirical, and short-term projects with immediate applications over long-term theoretical work, which is often seen as more speculative and less likely to yield quick returns (Norton & Cherastidtham, 2018). This short-term focus hinders the pursuit of breakthrough science, which is more likely to emerge from high-risk, high-reward research that does not guarantee immediate publication success (Azoulay, Zivin, & Manso, 2011.

Some prominent examples of theory marginalisation include:

- In economics, the emphasis on mathematical modelling and empiricist techniques has led to a decline in exploring alternative economic theories (Colander et al., 2009). Like their global counterparts, Australian universities have followed this trend, producing technically rigorous but theoretically narrow research that fits within the prevailing economic paradigm. This shift has been critiqued for stifling intellectual diversity and reducing the field's capacity to address complex economic issues such as inequality and financial instability (Keen, 2011).
- The push for rapid publication in the medical sciences has been linked to a replication crisis, where many published findings cannot be reproduced or validated (Baker, 2016). This highlights the dangers of prioritising quantity over quality, as the rush to publish can lead to inadequate peer review and insufficient attention to theoretical robustness. The medical research sector in Australia is particularly susceptible to these pressures, given its reliance on external funding and the high stakes involved in medical discoveries (Chapman, 2016).
- In climate change research, where there is a wealth of empirical data on climate patterns and impacts, the development of theoretical frameworks that integrate social, economic,

and environmental dimensions has lagged (O'Brien et al., 2010). This gap is partly due to the incentive structures that reward publication in disciplinary journals rather than interdisciplinary work that might better serve government and industry needs (Castree, 2015).

Moreover, the production of narrowly focused research can lead to academic commodification, where research is valued more for its quantity than its quality or relevance. This trend is exacerbated by the metrics-driven culture in academia, where the number of publications and citations often outweighs the significance of the research outcomes and impacts (Peters, 2013).

Consequently, researchers are incentivised to pursue "safe" research topics likely to result in publication rather than taking the risks necessary for theory-building or breakthrough discoveries (Henkel, 2000). Theory-building requires time, reflection, and often a departure from mainstream thought, making it less conducive to rapid publication (Swedberg, 2012). As discussed, the current academic environment discourages such deep, innovative work.

It is now much more difficult to identify Australian scientists and research organisations that have made breakthrough discoveries that represent significant and original findings or innovations with a global impact.

Table 1 provides a list of scientists and their associated institutions whose work is generally considered breakthrough rather than merely incremental. The table is drawn from the ABC's "Hottest 100 " Australian Scientists, chosen by Robyn Williams and filtered by applying a "breakthrough" criterion. Twenty-two scientists identified, but only five have been active in the last 24 years.

Table 1: Australian Scientists who have contributed "breakthrough" discoveries

Scientist	Field	Breakthrough Contribution	Timeframe	Host Institution
Ian Frazer	Immunology and Vaccinology	Co-invented the HPV vaccine, preventing cervical cancer and other related cancers.	2000s	University of Queensland
Michelle Simmons	Quantum Computing	Developed "atomic electronics" and pioneered quantum computing.	2000s-Present	University of New South Wales (UNSW)
Fiona Wood	Burns Medicine	Invented "spray-on skin" technology for treating burns.	1990s-2000s	University of Western Australia (UWA)
Brian Schmidt	Astrophysics	Co-discovered the accelerating expansion of the universe, providing evidence for dark energy.	Late 1990s-2000s	Australian National University (ANU)
Barry Marshall, Robin Warren	Medicine (Gastroenterology)	Nobel Prize for discovering Helicobacter pylori as the cause of stomach ulcers.	1980s-1990s	University of Western Australia (UWA)
John O'Sullivan	Wireless Communication	Developed the core technology for Wi-Fi, enabling modern wireless communication.	1990s	CSIRO
John Shine	Molecular Biology	Discovered the Shine-Dalgarno sequence, a key element in gene expression.	1970s	Garvan Institute of Medical Research (previously University of California, San Francisco)
David Warren	Aviation Safety	Invented the "black box" flight recorder.	1950s-1960s	Aeronautical Research Laboratories (now part of CSIRO)
Elizabeth Blackburn	Molecular Biology	Nobel Prize for co-discovering telomerase, impacting aging and cancer research.	1980s-2000s	University of California, San Francisco (originally from Tasmania, Australia)
Jacques Miller	Immunology	Discovered the role of the thymus in the immune system.	1960s-1970s	Walter and Eliza Hall Institute of Medical Research, University of Melbourne
Don Metcalf	Hematology	Discovered colony-stimulating factors, transforming cancer treatment.	1960s-1980s	Walter and Eliza Hall Institute of Medical Research, University of Melbourne
Peter Doherty	Immunology	Nobel Prize for discovering how the immune system recognizes virus-infected cells.	1970s-1990s	University of Melbourne

Scientist	Field	Breakthrough Contribution	Timeframe	Host Institution
Graeme Clark	Biomedical Engineering	Developed the modern cochlear implant, restoring hearing to the deaf.	1970s-1980s	University of Melbourne
Frank Fenner	Microbiology	Played a key role in the global eradication of smallpox.	1960s-1980s	Australian National University (ANU)
David Solomon	Polymer Chemistry	Developed plastic banknotes, enhancing currency security and durability.	1960s-1980s	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
Ruth Bishop	Virology	Discovered rotavirus, leading to life-saving vaccines for children.	1970s-1980s	Royal Children's Hospital, Melbourne
Lawrence Bragg	Physics	Nobel Prize for X-ray crystallography, foundational to structural biology.	1910s-1930s	University of Adelaide (during his early career)
Howard Florey	Medicine (Pharmacology)	Developed and mass-produced penicillin, the first antibiotic.	1930s-1940s	University of Oxford (originally from Adelaide, Australia)
John Eccles	Neuroscience	Nobel Prize for work on synapses, advancing the understanding of nerve communication.	1950s-1960s	Australian National University (ANU)
Macfarlane Burnet	Immunology	Nobel Prize for clonal selection theory, foundational to modern immunology.	1950s-1960s	Walter and Eliza Hall Institute of Medical Research, University of Melbourne
John Cornforth	Chemistry	Nobel Prize for work on the stereochemistry of enzyme-catalysed reactions.	1950s-1960s	University of Sussex (originally from Sydney, Australia)

The breakthroughs are heavily concentrated in the Clinical & Life Sciences field, which may reflect the investment in people and facilities through the National Health and Medical Research Council, established in 1926.

The connection between the proliferation of published journal articles in the Clinical and Life Sciences, particularly since 2002, and the instances of breakthrough science since that time has not been explored.

Investment in people and facilities in other areas of STEM has been less continuous than in the Clinical and Life Sciences. The Australian Research Council, established under legislation only in 2001, is descended from the Australian Research Grants Committee (ARGC), established in 1965. This committee, in turn, dates back to the Commonwealth Universities Research Grants Committee, established in 1946.

Below is a list of eminent Australian social sciences and humanities scholars who have made significant, globally influential contributions to their fields, aligning with the breakthrough criterion.

Table 2: Australian Social Scientists and Humanities Scholars who have contributed "breakthrough" discoveries

Scientist	Field	Breakthrough Contribution	Timeframe	Host Institution
Professor Peter Singer	Philosophy and Ethics	Introduced the concept of animal liberation and significantly influenced global ethical debates, particularly in bioethics and animal rights.	1970s-Present	University of Melbourne; Princeton University
Professor Glyn Davis	Public Administration and Policy	Contributed to the understanding of public administration, governance, and higher education policy, influencing reforms in Australia and internationally.	1990s-Present	University of Melbourne; ANU
Professor Mark Dodgson	Innovation Studies, Technology Management	Pioneered research on the management of innovation and contributed significantly to innovation policy and strategy in Australia and globally.	1990s-Present	University of Queensland
Professor Raewyn Connell	Sociology	Developed the concept of "hegemonic masculinity," a foundational idea in gender studies with global influence.	1980s-Present	University of Sydney
Professor John Braithwaite	Criminology and Regulatory Theory	Introduced the concept of restorative justice, significantly impacting global criminal justice practices.	1980s-Present	Australian National University (ANU)
Professor Inga Clendinnen	History and Anthropology	Provided groundbreaking insights into Indigenous Australian history and cross-cultural	1980s-2000s	La Trobe University

Scientist	Field	Breakthrough Contribution	Timeframe	Host Institution
		encounters, particularly through her work "Dancing with Strangers."		
Professor Geoffrey Blainey	History	Developed the concept of the "tyranny of distance," influencing the understanding of Australian and global history.	1960s-Present	University of Melbourne
Professor Hugh Stretton	Social Science, Public Policy	Influenced urban planning and public policy through his interdisciplinary approach and focus on social justice.	1960s-2000s	University of Adelaide
Dr. Edith Penrose	Economics and Business Strategy	Developed the Resource-Based View of the firm, foundational to business strategy and economic theory of the firm.	1950s-1980s	ANU, later at SOAS, University of London
Professor Trevor Swan	Economics	Developed the Swan-Solow model of economic growth, a foundational theory in macroeconomics that explains long-term economic growth.	1950s-1960s	Australian National University (ANU)
W.E.H. Stanner	Social Anthropology, Indigenous Studies	Introduced "The Great Australian Silence," drawing attention to the neglect of Indigenous history and culture.	1940s-1970s	Australian National University (ANU)
A.P. Elkin	Anthropology, Indigenous Studies	Pioneered the study of Aboriginal cultures and promoted the rights of Indigenous Australians.	1920s-1950s	University of Sydney

The scientists and scholars identified in Tables 1 and 2 are recognised internationally, often through Nobel Prizes. Their pioneering spirit, willingness to explore uncharted territories, and interdisciplinary knowledge have led to their groundbreaking discoveries**.** They often worked at the intersection of multiple disciplines, combining insights from different fields to create new ideas.

Their work has had a global impact, influencing scientific, medical, and technological practices worldwide. They were effective leaders, leading large research teams and shaping the next generation of researchers. Adaptability was crucial, and institutions like the University of Melbourne, ANU, and CSIRO provided funding, infrastructure, and research.

Many of these scientists were part of extensive collaboration networks, providing access to diverse expertise and opportunities for breakthrough discoveries.

The changing research environment

Today's research environment significantly differs from the 40-50 years ago, with a more technology-driven, globally connected, and interdisciplinary landscape. This has brought new opportunities for innovation and collaboration but also presents challenges, such as increased competition for funding and the need to navigate complex regulatory and ethical environments.

As discussed, there is a stronger emphasis on applied research and commercialisation of research outcomes. Funding bodies prioritise research with clear, immediate applications or the potential for economic impact. Scientists are increasingly expected to engage in activities that lead to commercial outcomes, such as patenting, creating spin-off companies, or collaborating closely with industry.

However, the tools and technologies available to researchers today are vastly more advanced, allowing for faster, more complex analyses and opening new avenues of inquiry. The ability to process and analyse large datasets (big data) is a defining feature of modern research. Automation of experiments and simulations through visualisation, advanced robotics and software increases the efficiency and scale of research activities.

Research today is far more globalised, with extensive international collaboration being the norm. The move towards open science, including open-access publishing and data sharing, has changed the landscape of research dissemination, promoting transparency and collaboration.

The research funding environment has become highly competitive, with grant application success rates often being exceptionally low. Funding opportunities are tied to short time horizons, which makes basic research challenging.

The rise of the internet and digital communication tools has transformed how researchers communicate, allowing for real-time communication and collaboration. Social media has become a significant platform for scientists to share their work, engage with the public, and communicate with other researchers.

There has been a significant increase in the regulation and oversight of research activities, particularly regarding ethical standards, data privacy, and research integrity. There is a greater emphasis on diversity and inclusion, work-life balance, mental health, societal impact and transparency, where researchers are subject to greater public and political scrutiny.

Balancing these influences while fostering an environment conducive to theoretical innovation remains a critical challenge for the scientific community and policymakers.

Weakening Relevance to Industry and Government

Industries and governments increasingly demand research that is empirically sound, theoretically innovative, and applicable to complex problems (OECD, 2017). However, the current academic incentive structure in Australian universities may not align with these needs. The focus on producing numerous, narrowly focused studies can lead to a body of research that, while methodologically rigorous, lacks the integrative and interdisciplinary approaches required to tackle real-world challenges (Gibbons et al., 1994).

The relevance of academic research to industry and government is crucial for translating knowledge into practical solutions. However, the shift towards mass-produced empiricist research can undermine this relevance. When universities prioritise quantity over quality in their research output, they risk producing work that, while technically sound, lacks the depth and insight needed to drive innovation and inform policy.

For instance, industries such as technology and pharmaceuticals rely heavily on breakthrough science and theoretical advancements to maintain their competitive edge. Similarly, governments require theoretically informed research to develop policies addressing multifaceted societal issues such as climate change, public health, and economic inequality (Clark, 2016).

If universities continue to prioritise empiricist research at the expense of theory-building, they may find their research increasingly irrelevant to these key stakeholders, leading to a decline in societal impact.

CONCLUSION

The Australian university sector's current trajectory, driven by an obsession with income and asset growth, has led to a range of unintended and potentially damaging consequences. While universities have become significant economic entities, generating billions in revenue, their focus on financial metrics and expansion has often come at the expense of their core academic and societal missions.

The reliance on international student income and the prioritisation of research output in publications have distorted institutional behaviours, leading to a decline in basic research, theory-building, and breakthrough science. The pressure to publish has fostered a culture of producing narrowly focused, empirically driven studies that may contribute little to advancing knowledge or addressing complex societal challenges. This trend undermines the relevance of

academic research to industry and government and threatens the long-term sustainability of the Australian research ecosystem.

RECOMMENDATIONS

Several recommendations flow from this analysis:

1. Shift the university business model from purely financial metrics to a more balanced approach that values long-term academic and societal contributions. This includes reassessing the emphasis on income generation through international student recruitment and redirecting resources towards supporting high-quality, impactful research.
2. Higher education providers adopt longer-term strategic planning horizons, extending beyond the typical five-year period. This would enable institutions to better anticipate and manage financial risks, adapt to changes in government policy, and invest in sustainable growth strategies.
3. A renewed commitment to basic research and theory-building is essential for generating breakthrough scientific discoveries. Funding agencies and universities should prioritise long-term, high-risk research projects that have the potential to transform fields of study and drive innovation.
4. Foster interdisciplinary research that integrates insights from multiple fields to address complex societal issues. This approach would enhance the relevance of academic research to industry and government, providing more holistic solutions to real-world problems.
5. Prioritise the quality, originality, and societal impact of research. This could involve recognising and rewarding contributions to theory-building, interdisciplinary work, and research that addresses pressing global challenges.
6. Expand entrepreneurial activities beyond research commercialisation, engaging more actively in new business creation, innovation districts, and public-private partnerships. This would diversify revenue sources and strengthen the universities' role in regional and national economic development.
7. Cultivate closer partnerships with government and industry to co-create solutions for societal challenges. This includes aligning research agendas with national priorities, including the recently *announced National Science Priorities*, and ensuring academic research remains relevant and applicable to policy and industry needs.

By implementing these recommendations, Australian universities can better align their growth strategies with their academic missions, ensuring they contribute meaningfully to society while maintaining financial sustainability. This approach will help preserve the integrity of academic research and ensure that universities remain relevant and impactful in addressing future complex challenges.

Implementation of the recommendations would require a policy environment in which higher education providers work in partnership with government and industry rather than through public advocacy. A first step in this process might be the re-institution of the Business-University Round Table, with Government involvement, modelled on similar arrangements in the UK, Canada, the US, and Europe.

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