There is a good deal of consensus that institutional diversity in higher education is a good thing. Simply put, systems with more diverse institutions perform better than systems with less diverse institutions. Yet the overall diversity of Australia’s higher education system remains unclear. Significant questions and opportunities remain unresolved. How diverse are Australia’s institutions today? How can stakeholders—particularly institutions and policymakers—understand and manage this diversity?

This LH Martin Institute and ACER research briefing seeks to shift discussion of diversity to a more considered level. We don’t promise neat solutions, but our analysis
moves beyond extant sectoral partitionings and contingent policy interventions to expose emerging dynamics and prospects for institutions, and hence for the system as a whole.

We have produced evidence-based profiles for Australian universities that mirror those being rolled out globally—namely from the U-Map and U-Multirank projects initiated in Europe. After contextualising our work, the heart of this briefing presents the profiles. Each institution profile contains five dimensions: Teaching and Learning, Student Profile, Research Involvement, Knowledge Exchange, and International Orientation. Each dimension contains a suite of data-driven indicators.

Our aim is to spur a new formative and evidence-shaped discussion that will enhance national policy and each institution’s strategy. The briefing closes by considering extensions to the indicator mix, to the population of institutions and level of analysis, and next steps that can be taken to further enhance transparency of the Australian university and, ultimately, tertiary education sector.
Contents

Executive summary 1
Introduction 5
  Same but different 5
  Diversity rationales 5
  The focus of our analysis 6
Charting the institutional landscape 6
  System and institution dynamics 6
  A push for profiles 8
  Setting the profiles 9
A look at Australian higher education 12
  Positioning structures 12
  Provoking provider patterns 13
Discriminating perspectives 20
  Indicators of distinction 20
  Going wider and deeper 21
  Where next now 22
Resources 23
  Appendix 1: Profile dimensions and indicators 25
  Appendix 2: Institution profiles 30
  Acknowledgements 31
Profiling diversity of Australian universities

Introduction

Same but different

Rumour has it that a Federal Education Minister once claimed the country had just one university with around 220 campuses. More recently prominent vice chancellors have commented that all institutions are variations on a single theme—the comprehensive research university. But is our higher education system indeed so flat? Or do Australia’s institutions—universities as well as non-university providers—attempt to occupy differentiated positions in an increasingly complex landscape? Are salient differences of a strategic, marketing or intellectual nature? And, importantly, does it matter?

This LH Martin Institute and ACER research briefing is intended to shift discussion of diversity in Australia’s higher education sector to a more considered level. We don’t promise neat solutions, but our analysis moves beyond extant sectoral partitionings to expose emerging dynamics and prospects for institutions, and hence for the system as a whole. We do this by using classification structures for institutional characteristics and performance that are being rolled out globally—namely U-Map (van Vught, 2009) and U-Multirank (van Vught & Ziegele, 2012).

Our research builds on a discussion of diversity in the Australian higher education sector that has a fairly long history (for instance, see Meek, 1991; Meek & O’Neill, 1996) but remains inconclusive. The topic has featured prominently in several national reviews (e.g. West, 1998; Nelson, 2002; Bradley, Noonan, Nugent & Scales, 2008). A cogent recent analysis of policy implications is given by Coaldrake and Stedman (2013) in their latest book. In late 2012 the Hon John Dawkins (former Federal Education Minister) commented that the Unified National System—established under his leadership—was never intended to be a ‘uniform’ national system (Trounson, 2012). This has always been the government’s policy position but, as is well known, many of the policy drivers that have been put in place since the birth of the UNS have stimulated universities to pursue similar goals and activities.

Caught in what would seem to be a semi-elastic web of conformity, the diversity debate so far has not been able to escape the ‘glass half full—glass half empty’ situation which reads, by-and-large, either that ‘all Australian universities are comprehensive research universities’ or that ‘…but clearly my university is different from yours’. There are two fundamental problems in this version of the debate. The first is that we are still struggling to come to terms with what diversity means for institutional positioning. The second is that because of this an authoritative set of indicators to underpin the discussion is absent. Our approach, built on the U-Map and U-Multirank transparency tools, offers a way out of this dilemma and provides new insights in the diverse Australian higher education landscape. But before delving into the details, let’s examine why diversity actually matters.

Diversity rationales

There is a good deal of consensus in the research literature that diversity in higher education is a good thing. Simply put, more diverse systems perform better than less diverse systems. Drawing from earlier conceptual and empirical work by Birnbaum (1983) and van Vught (2008) provides a succinct summary of the evidence. We review the major points.
First, more diverse systems better meet the diverse needs of students. When systems expand and evolve from elite to mass to universal systems (Trow, 1979) as is happening across the globe, the student body itself by definition becomes more diverse. A diverse set of institutions allows students to choose the one that best reflects their preferences and abilities, thereby optimising the chances of successfully completing a higher education degree.

Second, following from the above argument, a diverse system stimulates social mobility. There is no denying that for the large part the classic small higher education systems catered for the elite. Such systems were the perfect vehicle for keeping that elite ‘an elite’ by educating and socialising them in exclusive institutions. More diverse higher education systems allow for different access points and progression pathways and hence will allow for increased participation from the lower socio-economic strata and other equity groups.

A third argument relates to better meeting labour market needs. Labour markets increasingly fragment and differentiate, thus requiring different types of graduates. A more diverse higher education system is better able to respond to these needs.

Other benefits associated with diverse higher education systems relate to the potential for experimentation which, according to Jencks and Riesman’s (1968) analysis, will continuously lift the performance of higher education systems. Institutions try to differentiate in order to occupy niche markets. Once such niches prove viable, others will try to emulate, which in turn will lead to attempts to further differentiate, and so on. Australia’s geography, and the low mobility of our students (Edwards & van der Brugge, 2013), dampens such dynamic.

**The focus of our analysis**

Clearly, when taken seriously, institutional diversity grows quickly into a very complex discussion. In this contribution we seek to balance parsimony with due consideration to the inherent nuances of the matter. The next section touches briefly on key contexts, and on the value and methods of the profiles we have produced. At the heart of this briefing lies a presentation of the multidimensional profiles. The briefing closes by considering extensions to the indicator mix, to the population of institutions and level of analysis, and next steps that can be taken to further enhance transparency of the Australian university and, ultimately, tertiary education sector.

**Charting the institutional landscape**

**System and institution dynamics**

We begin by exploring the interplay between governments and institutions—the primary stakeholders in diversification analyses. Systems need policies that maximise the value and reach of the public dollar. Institutions seek ‘blue oceans’ (Kim & Mauborgne, 2005) that deliver alpha performance in increasingly contested terrain. Both eschew isomorphism that leads to inertia.

Many nations, including Australia, are promoting higher education as a key driver of economic growth. As such, universities and research organisations have become important targets of national policy. As van Vught and Huisman (2013) chart in a recent analysis of international policy steering (also see HEQCO, 2013), this leads naturally to formative system-level questions like:

- Do we have the best set of institution profiles in the context of the global competition for talent and knowledge?
- Do we have the best possible spread and critical mass of research units and infrastructures?
- Do we want to create one or two universities of high international academic standing while stimulating the remaining universities to develop other profiles?
- Or, alternatively, do we strive for a world-class system across the board with or without much undulation?
- Do we provide sufficiently diverse teaching programs to train a growing diversity of learners?
In most cases, and Australia is no exception, these questions are posed in a context in which institutions are being granted more autonomy by governments. But it is fair to say that governments have sometimes been hesitant to grant institutional autonomy in all areas (Esterman & Nokkola, 2009). Moreover, governments have often exchanged *a priori* control (through regulation) with *ex post* controls (through evaluation) (Neave, 2012). The crucial roles institutions can play with respect to national innovation policies are turning them into socio-economic policy instruments. External stakeholders (including potential new students and business and industry) ask for more transparency and accountability, and increasingly confront higher education institutions with questions about their relevance and effectiveness in terms of national innovation. Even so, institutional autonomy and scope for strategic choice compares favourably with the situation a few decades ago.

Institutions, like systems, have major stakes in positioning and its implications for performance. Leaders have a natural interest in identifying best options for sustainability and growth. Being distinguished and different from the rest is a strategic necessity. New corporate and education models—invoking various forms of outsourcing and partnership—are spawning an ever greater number of hybrid and derivative institutional forms (Coates & Thakur, forthcoming; Goedegebuure, 2012). As well, Australian institutions are characterised—and almost distinguished internationally—by agglomerations of corporate, academic and industrial arrangements. Such features appear distinctive, but are they underpinned by or reflective of any deep strategic difference in activity or potential?

Contextually, all higher education institutions find themselves operating in an increasingly stratified and international landscape. Recent persuasive interpretations (see Barber, Donnelly, & Rizvi, 2013; Price & Kennie, 2012; van Vught & Ziegele, 2012) have explored future scenarios for higher education, typically and perhaps essentially expressed from a globalised stance, that involve something like:

- a top echelon of (around 50?) stand-alone, highly prestigious, highly resourced, comprehensive universities;
international consortia of (100-200?) universities, sharing resources, offering joint and mutually accredited programs;

- a range of niche institutions, specialised in a few fields of research and education;

- a great diversity of primarily local and regional teaching institutions; and

- a set of high-tech, primarily virtual global teaching providers.

Steering a clear course in this context poses challenges for institutions, and raises the potential for demand overload. Higher education institutions are expected to be transverse problem solvers. They are intended to produce the knowledge and human capital that meet the needs of society, but also to play a central role in innovation processes, to contribute to regional development, to increase social inclusion and to contribute to the resolution of global problems. Worldwide there is widespread expectation that universities and other institutions should research an increasingly broad range of problems in an ever-growing holistic fashion and at an accelerated pace (see, for instance, the European Commission’s Horizon 2020 Program). Effective strategy in this context is the difference between all or nothing at all. Responding to global research competition necessitates careful research management. Expansion in demand for human capital formation requires institutions to steer educational provision. Such leadership demands robust and relevant interpretive mechanisms.

Hence we explore diversification because it offers hope for positioning a proliferation of institutions in an increasingly borderless world. Ultimately, interest flows from a desire to understand the activity, performance and potential of higher education. Our interest in this topic is finding a systematic way to capture the distinctiveness of each institution.

A push for profiles

The above dynamics render apparent the need for institution profiling. First, because of increasing
expectations and challenges institutions need to reassess and clarify their missions, goals and priorities, carefully defining their profiles. In addition, the increasing global competition strengthens the need for profiling. Strategic research management—including deliberation of with whom to compete and with whom to collaborate—is therefore one of the most important aspects of modern higher education leadership. Modern research management implies a clear view of an institution’s research strengths and weaknesses in a competitive global research market and the courage to select and develop a set of research priorities as a major defining part of the institution profile. Finally, the need for profiling stems from government imperatives regarding their higher education systems. Governments often seek an increasing diversity of the overall sets of higher education programs and urge institutions to contribute to this diversification. All these factors force higher education institutions to consider strategic choices regarding activities and performances.

Institution profiles display what the institution does, how they are performing, and how they compare to other institutions. Such profiles can be divided into ‘activity profiles’, and ‘performance profiles’. Activity profiles describe the extent of an institution’s functioning in defined areas, often drawing on discrete data elements. With these, ‘more’ may not necessarily be ‘better’. Performance profiles are comparative or evaluative, showing how well an institution performs its defined activities. With performance profiles, ‘more’ is usually ‘better’. The institution profiles presented in this briefing combine activity and performance profiles. In theory, a three-dimensional conceptualisation (indicator-by-activity-by-performance) could be used to combine these analyses.

An institution’s profile reflects the dimensions of its mission. These can be the well-known basic dimensions of teaching and learning, research, and knowledge exchange or transfer. But an institution may wish to emphasise other dimensions as equally important aspects of its mission, such as international orientation or regional engagement. By providing information about the activity or performance of an institution in terms of the dimensions of its mission, institution profiles serve as transparency instruments allowing both internal and external actors (such as students, industry, governments, etc.) to get to know the institution and to assess its fit with their needs and priorities.

Hence in pursuit of our broad aim of stimulating discussion about diversity, our main contribution in this briefing is the delivery of a suite of institution profiles. Drawing on the European Commission’s U-Map project (van Vught, 2009) we have derived data from numerous publicly available sources to offer a visual map of each Australian university. In doing this we encapsulate a broad range of perspectives about these institutions, providing a much more comprehensive picture than current rankings. Indeed, this tool is not intended as another ranking, but rather as an exercise for building a profile of each institution that allows users to explore multiple elements within and across universities.

The aim of this profiling tool is to allow stakeholders to ‘read’ an institution and assess its fit to their needs and priorities. The primary audience for these profiles are institution leaders and government policy makers. The secondary audience includes current and prospective students, and industry. These latter groups are secondary for current purposes because our current interest is pitched at the system level. The use of profiling tools by individuals for choosing institutions is important but lies beyond the current discussion.

**Setting the profiles**

Drawing from U-Map, the Australian profile provides insight via five dimensions:
- Teaching and Learning;
- Student Profile;
- Research Involvement;
- Knowledge Exchange; and
- International Orientation.

A number of indicators have been chosen to underpin each dimension, with 33 indicators included in the final institution profiles. As noted, each of the five dimensions used here have been established through U-Map. In this Australian replication we have moulded the indicators and elements to fit local contexts and data availabilities, where possible including the same indicators as in U-Map. Where this Australian profiling differs from the European tool, however, is through the mixture of elements relating to institution ‘activities’ and ‘performances’. U-Map focuses only on activities, while its sister profiling activity, U-Multirank draws on the performance elements. Technical notes on the selection of indicators are given in Appendix 1.
Practical, technical and substantive criteria were used to select the indicators. Practically, if the data was not available then it was not included in the profiling. To keep the profiling as transparent as possible only publicly available data have been used. Other practical considerations included whether the data provided a truly comparable metric and whether the data were stable over time, ensuring that future analyses remain consistent. Technical criteria included whether the data were valid and reliable/consistent. Consideration was given to the substantive relevance of the data element. This involved considering whether the element was linked with outcomes, whether there were meaningful differences between institutions, or whether the element was policy relevant.

Data elements in the Teaching and Learning dimension provide an indication of the range of offerings to students (number of fields with degrees offered), and recognition by the Australian Government’s Office for Learning and Teaching (OLT) (measured by Learning and Teaching citations and OLT awards). This dimension also includes an indicator of staff/student ratio, retention, the proportion of staff who are employed casually and of the teaching and teaching/research staff as a percentage of total academic staff. This data have been drawn primarily from the MyUniversity (Commonwealth of Australia, 2013b) website and national data published online (DIISRTE, 2013a).

The Student Profile dimension is composed of indicators that offer insight into the diversity of the students at each institution. One indicator in this dimension details the overall size of the student body, while other indicators highlight the mix of student age, socioeconomic status, and regionality. The percentage of part-time students and external students are also included in this dimension.

As the name suggests, the Research Involvement dimension focuses on institutions’ participation and contribution to research. Several indicators are drawn from Excellence in Research for Australia (ERA) (Commonwealth of Australia, 2011). These indicators look at the number of research active fields to signal breadth, and at the percentage of active fields in which the university is categorised as ‘at world standard’ or above (ERA rating score of three or higher). It was decided to use ERA rather than other bibliometric data because of the national scope of this profiling exercise. Other indicators in this dimension detail numbers of publications per academic and for the institution overall (again, providing an indication of scale and also a relative measure of concentration) as well as the proportion of all students who are research postgraduates and the proportion of graduates from the university who go on to full-time further study. An indication of relative revenue from research for the university is also included, drawn from financial data published online (DIISRTE, 2012).

The Knowledge Exchange dimension is the most contemporary. For this dimension we have mined data which we felt would underpin indicators of an institution’s output in non-traditional research and other activities. For instance, financial data have been used to examine the proportion of research funding which is derived from industry sources, and revenue from royalties, trademarks and licences. The number of active research collaborations and partnerships (as detailed by institutions in their Compacts1 with the

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1 Compacts are agreements between universities and the Australian Government, which provide a framework for universities to pursue their distinctive missions and strategic goals while contributing to the national objectives for higher education, research, research training and innovation.
Australian Government (DIISRTE, 2011)) relative to academic staff numbers is included, as is a measure of the percentage of graduates in full-time employment.

The profile also highlights an International Orientation dimension which is made up of separate indicators exploring the number and relative share of international students, the percentage of academic staff who gained their highest qualifications outside Australia, the absolute and relative number of collaborations with overseas partners, and the research income from international sources.

We had to build a rubric to operationalise this framework. The four distributional properties (central tendency, variability, skewness, kurtosis) of each indicator were analysed and four categories were defined. For indicators exhibiting normal characteristics the four categories were set by taking quartiles of the national distribution. Different methods were used for other indicators, such as taking a basic cut at 25, 50 and 75 per cent, or specifying more indicator-specific cut-points. Overall, our approach was steered by the desire to use the chosen indicators (and categories within these indicators) to highlight diversity within the sector to the extent that diversity really does exist, but also to ensure that as far as possible the display of each indicator does not artificially conflate or magnify diversity. Appendix 1 gives further details.

For reporting purposes, each institution was placed in the first, second, third or fourth group on each indicator. Where data on an element was not available the indicator in the graph was left blank. The output was compiled graphically into a sunburst profile for each institution. An example profile for ‘Median University’ given in Figure 1. This fictitious institution represents the average of all Australian universities, presenting

![Figure 1: ‘Median University’ profile](image-url)
the median national value for each indicator. This profile provides a kind of reference point against which profiles for individual universities can be compared.

The initial construction of the Australian institution profiles was undertaken for all Table A and Table B higher education providers (Attorney-General’s Department, 2003) with the exception of Bachelor Institute—40 in total. In time, we will expand this work to incorporate the other 130 or so accredited higher education providers. At this ‘proof of concept’ stage we focus on universities, purely because at a practical level the information and data used in this exercise is uniformly collected and publicly reported for these providers. Expansion to other provider types is feasible though certain criteria would require modification given available data.

A look at Australian higher education

Positioning structures

Australia has a vibrant higher education market, with 41 universities and around 130 non-university institutions (TEQSA, 2013). Nonetheless, it could be argued that systemic diversity in Australia is relatively low as there are only a handful of institutional types. The universities form an oligopoly which look to each other for competitive positioning. There are high and well-regulated barriers to entry, and in recent years only one of the non-university institutions—MCD University of Divinity—has attained (specialised) university status. Of the universities, six have fewer than 10,000 students, nine have between 10-20,000 students, nine between 20–30,000, seven between 30–40,000, six between 40–50,000 students, and four have more than 50,000 students (DIICSRTE, 2013b). The non-university institutions appear more diverse, varying in size from small providers to large international operations.

On balance, although sometimes accused of being insular and moving at glacial speed, closer analysis reveals that Australia has an entrepreneurial and innovative higher education system. Just prior to the economic downturn in the early 1980s, Australia had 19 universities and 75 colleges of advanced education (Commonwealth of Australia, 1993). In 1981, Australia had a total student enrolment of 336,702, of which there
were 283,376 undergraduate students, 12,465 research trainees and less than five per cent international students. In 2011, Australia had 40 universities and no colleges of advanced education. There were 1,155,546 students, including 806,995 undergraduate students, 58,641 research trainees and 308,699 international students. This change is mapped in Figure 2. In 2011, there was 48,403 academic staff. 76.3 per cent of bachelor graduates were in full-time employment and about one-fifth of bachelor graduates were taking further full-time study. Universities produced 55,907 (weighted) academic research publications in 2011, and generated around $91m revenue in royalties, patents or trademarks. In this thirty year period the national student/staff ratio doubled. In 2011, the Australian Government provided $1,763 million in research funding, students paid $5.4 billion in fees and charges, and industry contributions totalled $831 million ((DIICSRTE, 2013a, 2013b; Graduate Careers Australia, 2012).

Key policy initiatives that have spurred growth include:

- moving from education for mostly the elite, to mass access;
- development of the binary system (1965-1987), then the Unified National System (1988-current);
- a diversification of research funding streams;
- diversification of funding sources, specifically with the introduction of the Higher Education Contribution Scheme (HECS), postgraduate course fees, and full-fee paying arrangements for overseas students;
- major expansion in research activity and research training in areas of national importance;
- development of new forms of national and international linkages between sectors, industries and nations;
- the internationalisation of higher education;
- an emerging concern with quality of education in the wake of massification and increasing demands for university accountability; and
- further enhancement of the higher education market, including the introduction of the demand driven system.

These broad changes have corresponded closely with those experienced by many other developed and developing nations. But despite (or in some instances, because of) these changes, the prevailing institutional structure is an enterprise that combines teaching, research and other service functions across a range of fields of study and professional training. In general, the Australian ‘university’ of 2013 would appear to combine local, national and global agendas to produce a range of public and private goods. Nevertheless, these policy contexts have also promoted institutional competition, and foster the ambitions of universities to be ‘equal but different’ to use the motto of the old binary system. The challenge for the Australian university is then to have an institution profile that differentiates it.

**Provoking provider patterns**

The raw profiles for each institution are intrinsically interesting and can be studied in isolation. The profiles also provide material for exposing patterns among institutions, and establishing new groupings. We explored two different ways of analysing the combined profiles. The first was to trial the profiles at an LH Martin Institute workshop in February 2013. The second was to analyse the indicator data statistically.

The workshop was attended by about 25 participants who work in the higher education policy arena, including university leaders, government department officials, and institutional researchers. During the diversity seminar, participants were
divided into four teams. Each team was given a full set of 41 Australian university profiles, de-identified. Participants were asked to examine the profiles and then to identify groups of institutions based on any criteria which they saw as offering insight into the typology or mission of institutions. Each of the four participant teams spent about an hour examining, sorting and identifying patterns and groupings of institutions. It was evident that the use of multiple dimensions and colour-coding was visually engaging. It allowed participants to easily identify patterns across institutions and make their own judgements of what is more relevant and important. The diverse suite of measures enabled people to also visually identify distinct institutional missions, otherwise potentially obscured. Workshop outcomes were used to revise the profiles, to explore diverse prospects for grouping universities in Australia, and to inform the subsequent statistical analysis.

Statistical analysis of the profiles provided a purely quantitative means of exposing patterns among institutions. Such analysis could proceed in many ways, even despite constraints imposed by the data and number of institutions. Our intention in this briefing is to stimulate further analysis rather than deliver a comprehensive and conclusive solution. In summary, hierarchical cluster analysis was conducted on the standardised indicator data in each dimension. Such cluster analysis was repeated within all five dimensions. For each dimension, institutions that clustered together consistently were grouped together. We stress that this outcome is only one among a large range of potential number and type of groupings.

The exploratory cluster analysis revealed six institution groups. These are shown in Figure 3 to Figure 8. Group 1 (Figure 3) tends to contain universities in regional areas, although it does not contain all regional universities. Group 2 (Figure 4) contains 16 universities. The statistics suggest homogeneity but the institutions cover a broad range. Group 2 includes universities from metropolitan, regional and outer-suburban areas, and members of the ATN, the RUN and the IRU associations. Group 3 (Figure 5) also appears to be a ‘mixed’ group relative to traditional groupings. The six institutions in this group tend to be among those that are ‘un-aligned’ in existing peak-body networks. Group 4 (Figure 6) contains research intensive universities based in large metropolitan areas, with all five here being part of the Go8. Group 5 (Figure 7), includes the remaining three Go8 institutions. These are the Go8 institutions that are in the smaller capital cities of Australia and tend to have smaller student cohorts than those in Group 4. Group 6 (Figure 8) contains only RMIT University. The cluster analysis suggested that this institution was sufficiently different from all other institutions.

The empirically-driven groupings seem intuitive in certain cases, but not in other instances. For instance, is RMIT University that substantially different to be categorised on its own? RMIT University’s international orientation and student profile are similar to Monash University’s, though these institutions differ in terms of research. Group 2 is a large cluster of institutions which may lend credence to the ‘variations on one theme’ conceptualisation of the comprehensive
Figure 3: Group 1 universities
Figure 4: Group 2 universities
Figure 5: Group 3 universities
Figure 6: Group 4 universities
Figure 7: Group 5 universities

The University of Western Australia

The University of Adelaide

The Australian National University

RMIT University

Figure 8: Group 6 university
research university which is not as intensely active in research as the Go8 institutions? Group 2 also contains regional universities which, at face value, may be better placed in Group 1. What is the best way to interpret the two groups of research intensive universities (Groups 4 and 5)? And what are the true defining characteristics of Group 3? Why do certain statistical results conflict with those from the February workshop, in which Macquarie University was placed with research intensive universities?

Clearly, the workshopping and statistical analysis provokes more questions. This goes to our broader perspective that empirical analysis of institutions has the potential to yield new insights and patterns. Indeed, the profiling process brings out the inherent complexity and notable diversity in Australian universities. This exercise also makes clear that there is a need for more nuanced analysis through inclusion of additional indicators and dimensions. The next section provides examples.

**Discriminating perspectives**

In an era of increasing accountability and change, a transparency tool which provides information about an institution’s activities plays an important role—not only for the institution through better strategic positioning, but also for government and other stakeholders. For government, such information helps find the right mix of institutions to serve the system’s long-term interests alongside other national agendas.

The LH Martin Institute and ACER intend to refine and update these profiles as new insights and data become available, likely annually or as a rolling dynamic online process. This 2012/13 contribution is intended to seed and spur discussion and development. Surely, we reason, such strategic analysis is helpful given abundant restructuring, recurrent repositioning, and emerging policy contexts. By way of conclusion, we investigate a non-exhaustive series of areas for growth.

**Indicators of distinction**

As mentioned, the current dimensions and indicators are a necessarily preliminary set. The selection and definition of indicators is significant, for it frames (and necessarily constrains) analysis and discussion. In compiling this suite we have identified obvious potential additions that would distinguish institutions.

First, a ‘regional engagement’ dimension could be included. Though this is a part of U-Map, we were unable to factor it into the Australian profiling tool. In Europe this dimension pertains to the extent to which graduates are employed in the region served by the university, the proportion of locally sourced students, and the extent to which income of the university is sourced from the region in which the institution is located. We have not included this dimension due to the difficulty in defining a university’s ‘region’. Further, even if some proxy for geographic region was derived Australia lacks sector-wide data at sufficient granularity. This is a clear limitation of the exercise given that the emphasis on regional engagement is likely to be different between universities in Australia and therefore important for highlighting in a diversity-focussed exercised. Further development of the profile in this direction is important.

Second, a range of ‘optional’ institution-level dimensions or indicators might be considered. The capacity to differentiate institutions can be driven by either quantitative or qualitative difference among the measured indicators. Institutions that differ on quantitative grounds—for instance, being high or low on a specific research indicator—can be distinguished by activity and performance. Real differences, however, are qualitative in nature, either as a result of recording different criteria on a given dimension, or performance on different dimensions. A further more substantial prospect arises from the adoption of different dimensions or data elements by different providers, perhaps even the inclusion of evidence unique to single providers. Here a balance must be struck between relativism and generalisability—between enabling comparison among institutions, and enabling qualitative differentiation. But without differentiation in indicators, it could be argued, the process of reporting institutions even on multiple dimensions may be homogenising and reductive—hardly our point. Clearly, a range of optional dimensions or data elements might be considered so
long as they were strategically meaningful and data exists. These might cover financial metrics, indicators of ownership and governance arrangements, performance on rankings, and perhaps further indicators of commercialisation.

Third, as affirmed internationally via the OECD AHELO project (Coates & Richardson, 2012) and nationally by the Higher Education Standards Panel (2013), a ‘learning outcomes’ dimension should be added. Educational processes reduce to students achieving high-quality outcomes. This general need is magnified given the extent of contemporary educational and organisational reconfiguration underway. In this environment, information on the extent to which institutions have kept students engaged to completion without undue acceleration or shortcut and ensured high-quality learning, is vital. Adding a learning outcomes dimension would address serious information gaps, and it would help institutions manage growth, quality and cost complexities. The need is magnified for institutions that do not focus specifically on research. As with regional engagement, however, current data availability is the major hindrance to adding data on learning outcomes to institution profiles.

Fourth, community engagement is another area in need of greater elaboration in the profiles. Amid increasing international competition for funding, staff and students, institutions are under growing pressure to demonstrate a return on research and teaching investment. From governments to corporations, universities are being asked to go beyond traditional bibliometrics and demonstrate engagement and impact—economic, environmental and social. Yet standard engagement measures do not currently exist, nationally or internationally. Community engagement is very likely the least well defined area of institutional performance and even activity. A promising line of development is to use media contributions as a proxy. Launched in 2011, for instance, The Conversation (see www.theconversation.com) is an independent online source that reports analysis and commentary from over 5,000 academics and researchers from 300 institutions. A complex suite of readership indicators are compiled, flagging a potential means of quantifying engagement. Ultimately, of course, engagement would include an array of different metrics including, for instance, contributions to government white papers, ministerial briefings or policy, conferences, events or public speaking engagements, and consulting or community engagement activities.

Fifth, and related to the above, there is wide scope to further develop the knowledge exchange dimension. An indicator of university-industry collaboration, such as in the most recent Leiden ranking (see www.leidenranking.com) could be a possible inclusion in our profiling tool. Defined as the proportion of the publications of a university that have been co-authored with one or more industrial partners, it aims to reflect successful research cooperation and other research-related connections with the business sector.

Sixth, another potential indicator is reputation with key stakeholders. While this is not available in national datasets, conceptually this seems to be a key ingredient of diversity. This indicator might be underpinned by data captured via feedback from students, staff, alumni, employers, industry and local communities. Such information is difficult to capture in a valid and reliable way, but given its significance to institutions would be worth pursuing.

Going wider and deeper

Along with new perspectives, the profiling process could be extended in both breadth and depth. In introducing this analysis we noted that both U-Map and U-Multirank being globalised, including the incorporation of Australian institutions, so the work is expanding independent to our efforts. Replication helps validate, contextualise and improve the European work.

Within Australia, broadening to include non-university providers is a natural progression. Given data constraints, however, this expands into a reasonably sizeable exercise. Nonetheless, this expansion is necessary to ensure the profiling work captures the full population of Australia’s higher education institutions. The scope and value of this work should be reviewed.

A further step is to develop multilevel (i.e. discipline, program or degree) indicators that enable profiling within institutions. The vast majority of Australian universities offer most if not all fields of education and training. Mapping at this level would enable academic faculties, departments and/or schools to better position themselves against a landscape of ‘sameness’ and explore benchmarking opportunities with comparable partners. This is important given that such units are organisationally very significant, and that differentiation at this programmatic level is the
foundation of true diversity. Of course, should program-level profiling be feasible, it would raise the deeper question of whether institutional-level comparisons are meaningful.

This prospect evokes a number of considerations. While there are a core set of dimensions and indicators that may be relevant and meaningful at all levels, there will be specific dimensions/indicators which need to be adapted to a particular discipline, program or degree. A good example is the publication cultures in different disciplines, which will require different definitions of indicators of research output across different disciplinary fields. Another example is student learning outcomes—the outcomes of say medical students in terms of bedside teaching and clinical education will be different from those of law students. Some disciplines may also regard certain dimensions such as involvement in knowledge exchange as less relevant to their core activities.

Producing activity and performance profiles at sub-institutional levels allows for national and international comparisons of the distinctiveness of particular disciplines, programs or degrees, encourages differentiation, and presents powerful reference points for various stakeholders. It is the credible next step for higher education systems, and institutions within, to focus on transparency and quality in their educational functions.

A final point to be made is the ‘moment in time’ nature of our analysis so far. What is presented in this research briefing is a snapshot of Australian university profiles based on data collected at a particular time. It by no means provides insights in the developmental dynamics that also are part and parcel of our system. This probably is most clear in relation to the research dimension. We know for a fact that there are a number of younger universities that are developing a research portfolio and that are making significant progress with this, but are coming from a very low base. Our current analysis does not reflect this at all. Annual reporting on the diversity profiles can overcome this issue, though it needs to be recognised that given the very large differences between the research intensive universities and the others, we may also need a somewhat different set of indicators to take these developmental and ‘not an equal playing field’ aspects into account.

Where next now

Our research presented in this briefing offers new perspectives on Australian higher education. The formative nature of this work implies that there are many constraints and limitations to work through. There are disciplinary biases in various measures, for instance. Ties to industry and product development will be much higher, for example, in institutions with large engineering or health programs but not so much for those with larger basic science or social and behavioural science programs. It might be possible to redress this bias through the application of field normalisation techniques. Another type of bias is related to characteristics of student population, especially selectivity and non-traditionality. There may be value in adjusting certain indicators by student differences. There could be value in further distinguishing activity from performance profiles. Most broadly, there is a need to expand the profiling to non-university providers, and to conduct a range of additional analyses and consultations.

Benchmarking is a ‘logical’ follow-up to the profiling work discussed here, and an essential mechanism for stimulating diversification. Essentially, benchmarking involves “…the process of self-evaluation and self-improvement through the systematic and collaborative comparison of practice and performance with similar organisations in order to identify strengths and weaknesses, to learn how to adapt and improve organisational processes” (Burquel & Van Vught, 2010: 249). The voluntary nature of benchmarking arguably leads to a stronger sense of commitment and engagement with the improvement process. The profiles are designed to stimulate and structure such work.

A transparent instrument which provides information about an institution’s activities has an important role to play in an era of greater accountability. For higher education institutions these profiles offer effective ways to better understand, analyse and position themselves in rapidly changing contexts. For governments, it is about finding the best set of institution profiles to underpin the development of a knowledge economy alongside other national agendas. Clearly, there are important implications for
financial considerations, workforce development, and career formation.

This initial construction of Australian institution profiles makes clear that policy makers and university leaders can and must make strategic choices. For policy making, it is about defining the right mix of institutions to serve the system’s interests. For university leaders, it is about defining their ambition in the national and global higher education landscapes and to consider whether these positions are sustainable. It is a dialogue that both sides need to have together to find the critical balance of institutional aspirations against those of the nation as a whole. This is not only important for improving the performance of the higher education system but also in progressing the economic, social and cultural vitality of Australia.

The need to differentiate institutions within the rubric of Australia’s higher education system is gaining critical attention. One way to do this is the development of an agreed mission alongside a clear expectation that institutions would seek excellence within this designated mission. Obviously, this has major implications—in areas such as governance, funding and workforce—on institutions and systems. But with the right attitude and gumption, the possibility for innovation is boundless.

**Resources**


## Appendix 1: Profile dimensions and indicators

Table 1: Dimensions and indicator details

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Indicator label</th>
<th>Indicator description</th>
<th>Indicator details</th>
<th>Indicator source/s</th>
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<td>Teaching and Learning</td>
<td># Fields of ed</td>
<td>Number of fields of education with degrees offered</td>
<td>Based on all commeners by ASCED Broad field of education (total of 12 fields)</td>
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<td></td>
<td>L&amp;T citations</td>
<td>Learning and teaching citations (academic staff FTE per citation)</td>
<td>Calculated by dividing number of FTE academic ‘teaching only’ and ‘teaching &amp; research’ staff by number of citations for T&amp;L from OLT</td>
<td><a href="http://www.myuniversity.gov.au">www.myuniversity.gov.au</a> and uCube (DIICCSRTE) FTE staff</td>
</tr>
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<td>Teach awards</td>
<td>Awards for university teaching (academic staff FTE per award)</td>
<td>Calculated by dividing number of FTE academic teaching or teaching &amp; research staff by number of awards for T&amp;L from OLT</td>
<td><a href="http://www.myuniversity.gov.au">www.myuniversity.gov.au</a> and uCube (DIICCSRTE) FTE staff</td>
</tr>
<tr>
<td></td>
<td>% Casuals</td>
<td>% of academic staff in casual positions</td>
<td></td>
<td><a href="http://www.myuniversity.gov.au">www.myuniversity.gov.au</a></td>
</tr>
<tr>
<td></td>
<td>Staff/stud ratio</td>
<td>Staff student ratio Number of students EFTSL per FTE academic staff</td>
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<td><a href="http://www.myuniversity.gov.au">www.myuniversity.gov.au</a></td>
</tr>
<tr>
<td></td>
<td>Retention</td>
<td>Retention rate for commencing students Retention rate (adjusted DIICCSRTE calculation) commencing bachelor domestic students.</td>
<td>HESC (DIICCSRTE), Students 2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% Acad staff</td>
<td>Teaching and Teaching &amp; Research staff as % of total academic staff</td>
<td>FTE</td>
<td>uCube (DIICCSRTE) -Staff FTE 2011</td>
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<td>Student Profile</td>
<td># Students</td>
<td>Size of student body EFTSL domestic and international students</td>
<td>uCube (DIICCSRTE) -Load 2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td># Undergrads</td>
<td>Undergraduate students EFTSL domestic and international students</td>
<td>uCube (DIICCSRTE) -Load 2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td># Postgrads</td>
<td>Postgraduate students EFTSL domestic and international students</td>
<td>uCube (DIICCSRTE) -Load 2011</td>
<td></td>
</tr>
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<td>% Mature age</td>
<td>Mature age students (% ugrad 30 and above) Domestic undergrads only</td>
<td>DIICCSRTE unpublished (data request by project team)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% Part time</td>
<td>Part time students (% of all domestic ugrads) Domestic undergrads only</td>
<td>uCube (DIICCSRTE)-enrolments 2011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% External</td>
<td>External students (% of all domestic ugrads) Domestic undergrads only</td>
<td>uCube (DIICCSRTE)-enrolments 2011</td>
<td></td>
</tr>
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<td></td>
<td>% Low SES</td>
<td>Low SES students (% of cohort) Domestic undergrads only</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>% Regional</td>
<td>Regional/remote students (% of cohort) Domestic only</td>
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<td></td>
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<tr>
<td>Dimension</td>
<td>Indicator label</td>
<td>Indicator description</td>
<td>Indicator details</td>
<td>Indicator source/s</td>
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<td>-------------------------------</td>
<td>------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
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<tr>
<td>Research Involvement</td>
<td># Research pubs</td>
<td>Number of academic research publications</td>
<td>DIICCSRTE weighted value (book=5, other pub=1)</td>
<td>Research Income, DIICCSRTE, 2011</td>
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<tr>
<td></td>
<td>Pubs per acad</td>
<td>Number of academic research publications per academic</td>
<td>Ratio of publications to staff (Research and Teaching &amp; Research academic staff FTE)</td>
<td>Research Income, DIICCSRTE, 2011, uCube (DIICCSRTE) - Staff FTE 2011</td>
</tr>
<tr>
<td></td>
<td>% Research income</td>
<td>Research income as % of all revenue</td>
<td>DIICCSRTE and ARC research grants as a % of all revenue</td>
<td>University Finances Tables, DIICCSRTE, 2011</td>
</tr>
<tr>
<td></td>
<td># Research fields</td>
<td>Number of research active fields</td>
<td>Number based on the 22 main fields in ERA</td>
<td>ERA, Australian Research Council</td>
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<tr>
<td></td>
<td>% Res fields world class</td>
<td>% of research active fields with world class (or higher) output</td>
<td>Proportion of all main fields in which the university is active which have 3 or higher in ERA</td>
<td>ERA, Australian Research Council</td>
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<td></td>
<td>% Research studs</td>
<td>PG research student load as a % of total student load</td>
<td>Domestic only EFTSL</td>
<td>uCube (DIICCSRTE) - Load 2011</td>
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<tr>
<td></td>
<td>% Grads into study</td>
<td>% graduates in further full-time study</td>
<td>Domestic bachelor completers sourced from GDS</td>
<td><a href="http://www.myuniversity.gov.au">www.myuniversity.gov.au</a></td>
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<tr>
<td>Knowledge Exchange</td>
<td>$ '000 Royalties, patents</td>
<td>Royalties, patents, trademarks, licenses revenue ($ '000)</td>
<td>Total $ reported in line item ‘Royalties, Trademarks and Licenses’</td>
<td>University Finances Tables, DIICCSRTE, 2011</td>
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<td></td>
<td>% Funds from industry</td>
<td>Industry and other funding as a % of research income</td>
<td>Proportion of total research income derived from Australian Industry and Other Research Funding identified as Contracts, Grants (not Commw competitive), Donations Bequests and Foundations, and CRCs</td>
<td>Research Income, DIICCSRTE, 2011</td>
</tr>
<tr>
<td></td>
<td>% Grads in f/t work</td>
<td>% graduates in full-time employment</td>
<td>Domestic bachelor completers available for f/t work, sourced from GDS</td>
<td><a href="http://www.myuniversity.gov.au">www.myuniversity.gov.au</a></td>
</tr>
<tr>
<td></td>
<td># Research collabs</td>
<td>Number of active research collaborations &amp; partnerships</td>
<td>Under Compacts 7.3.5-Innovation, taken from the ‘baseline’ column</td>
<td>Compacts (DIICCSRTE and individual universities)</td>
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<td>Staff per collab</td>
<td>Active research collaborations &amp; partnerships (academic staff per collaboration)</td>
<td>Number of staff (Research and Teaching &amp; Research staff FTE) per collaboration as defined above</td>
<td>Compacts (DIICCSRTE and individual universities), Research Income, DIICCSRTE, 2011, uCube (DIICCSRTE) - Staff FTE 2011</td>
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<tr>
<td>Dimension</td>
<td>Indicator label</td>
<td>Indicator description</td>
<td>Indicator details</td>
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</tr>
<tr>
<td>International</td>
<td># International</td>
<td>Number of international students</td>
<td>EFTSL Postgraduate and Undergraduate</td>
<td>uCube (DIICCSRTE) -Load 2011</td>
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<td>Orientation</td>
<td>% International</td>
<td>% of all students that are international</td>
<td>EFTSL Postgraduate and Undergraduate</td>
<td>uCube (DIICCSRTE) -Load 2011</td>
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<tr>
<td></td>
<td>Intern res inc %</td>
<td>Research income from international sources as a % of all</td>
<td>Proportion of total research income derived from International A: Competitive,</td>
<td>Research Income, DIICCSRTE, 2011</td>
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<tr>
<td></td>
<td>of all</td>
<td>research income</td>
<td>Peer-reviewed research income and International B: other income for research</td>
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<td># OS collabs</td>
<td>Number of overseas collaborations/partnerships</td>
<td>Under Compacts 7.3.5-Innovation, taken from the ‘baseline’ column</td>
<td>Compacts (DIICCSRTE and individual universities)</td>
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<td></td>
<td>OS collabs as %</td>
<td>Overseas collaborations/partnerships as a % of all</td>
<td>Under Compacts 7.3.5-Innovation, taken from the ‘baseline’ column divided by the number of total active collaborations listed</td>
<td>Compacts (DIICCSRTE and individual universities)</td>
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<tr>
<td></td>
<td>of all</td>
<td>collaborations</td>
<td></td>
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</tr>
<tr>
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<td>% Staff with OS</td>
<td>% of academic staff that obtained their highest qualification overseas</td>
<td>FTE academic staff, only staff with location of qualification known are included in calculation</td>
<td>DIICCSRTE unpublished (data request by project team)</td>
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<tr>
<td></td>
<td>qual</td>
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**Notes:**
ASCED: Australian Standard Classification of Education
CRCs: Cooperative Research Centres
DIICCSRTE: Department of Innovation, Industry, Climate Change, Science, Research and Tertiary Education
EFTSL: Effective Full Time Student Load
FTE: Full Time Equivalent
GDS: Graduate Destinations Survey
HESC: Higher Education Statistics Collection
OLT: Office for Learning and Teaching
T&L: Teaching and Learning
## Table 2: Dimensions and indicator descriptive statistics

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<tr>
<th>Dimension</th>
<th>Indicator label</th>
<th>Descriptives</th>
<th>Indicator cut scores</th>
<th>Institutions per category</th>
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<td>Mean</td>
<td>Median</td>
<td>Min</td>
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<td>21.0</td>
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<td>86.3</td>
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<td># Postgrads</td>
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<td>% Part time</td>
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<td>% External</td>
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<td>% Low SES</td>
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<td>% Regional</td>
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<td>1.3</td>
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<td>% Research income</td>
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<td>59</td>
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<td>Indicator cut scores</td>
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<td>Mean Median</td>
<td>Min Max</td>
<td>Method Cut 1 Cut 2 Cut 3</td>
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<td>Knowledge Exchange</td>
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<td>2388.4 175.0</td>
<td>0.0 28003.0</td>
<td>Derived 7.000 14.000 28.000</td>
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<td>% Funds from industry</td>
<td>26.2 21.4</td>
<td>5.3 91.0</td>
<td>Derived 25 50 75</td>
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<td>% Grads in f/t work</td>
<td>77.4 77.1</td>
<td>67.1 87.4</td>
<td>Derived 70.0 75.0 80.0</td>
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<td># Research collabs</td>
<td>328.2 174.0</td>
<td>0.0 1819.0</td>
<td>Quartile 73.0 174.0 305.0</td>
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<td>Staff per collab</td>
<td>14.4 4.5</td>
<td>0.7 239.0</td>
<td>Derived 5 10 15</td>
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<td>International</td>
<td># International studs</td>
<td>5878.1 4571.5</td>
<td>76.0 20410.0</td>
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</tr>
<tr>
<td>Orientation</td>
<td>% International studs</td>
<td>26.4 26.1</td>
<td>4.7 50.6</td>
<td>Quartile 17.9 26.1 32.5</td>
</tr>
<tr>
<td></td>
<td>Intern res inc % of all</td>
<td>4.1 3.9</td>
<td>0.0 172.0</td>
<td>Quartile 1.8 3.9 5.8</td>
</tr>
<tr>
<td></td>
<td># OS collabs</td>
<td>64.6 32.5</td>
<td>0.0 513.0</td>
<td>Derived 25 100 250</td>
</tr>
<tr>
<td></td>
<td>OS collabs as % of all</td>
<td>15.7 13.5</td>
<td>0.0 63.4</td>
<td>Derived 8.7 13.5 20.8</td>
</tr>
<tr>
<td></td>
<td>% Staff with OS qual</td>
<td>23.7 22.0</td>
<td>6.2 46.9</td>
<td>Quartile 17.9 22.0 27.8</td>
</tr>
</tbody>
</table>
Appendix 2: Institution profiles

Please visit the Australian Institution Profiles website:
LH Martin Institute (LHMI) and ACER thank the people who attended the February workshop and who helped shape our thinking over the last few months, and before.

Earlier drafts of this briefing were circulated to key tertiary education stakeholders. We are very grateful to the people who provided feedback and comments, including (in alphabetical order): Anne Baly (Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education), Professor Vic Borden (Indiana University, Bloomington), Professor Glyn Davis (University of Melbourne), David de Carvalho (Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education), Professor Jane den Hollander (Deakin University), Jon File (Centre for Higher Education Policy Studies (CHEPS), University of Twente), Martin Hanlon (University of Technology, Sydney), Louise Hargreaves (Bond University), Conor King (Innovative Research Universities), Dr Phil MacKinnon (Australian Council for Educational Research), Professor Bill Massy (LHMI, University of Melbourne), Professor Lynn Meek (LHMI, University of Melbourne), Dr Carol Nicoll (Tertiary Education Quality and Standards Agency), Jacob Pearce (Australian Council for Educational Research), Dr Caroline Perkins (Regional Universities Network), Belinda Robinson (Universities Australia), Professor Alan Robson (LHMI), Dr Geoff Sharrock (LHMI, University of Melbourne), Professor Andrew Vann (Charles Sturt University) and Professor David Wilkinson (Macquarie University).

This briefing was authored by (in alphabetical order) Hamish Coates (ACER, LHMI), Daniel Edwards (ACER), Leo Goedegebuure (LHMI), Marian Thakur (LHMI), Eva van der Brugge (ACER) and Frans van Vught (CHEPS, LHMI). Peter Bentley (LHMI) provided invaluable research support. The Australian Council for Educational Research Ltd (ACER) and the LH Martin Institute reproduced the data contained in this research briefing from publicly available sources. The data was created by other organisations. To that extent ACER and LHMI do not represent or guarantee the accuracy or reliability of the data contained in this research brief which is produced for your consideration and verification.

Hamish Coates, Daniel Edwards, Leo Goedegebuure, Marian Thakur, Eva van der Brugge and Frans van Vught

Melbourne, June 2013