Economic and Non-financial Performance Indicators in Universities: The Case of the Australian University System and the Establishment of a Performance Driven University System

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Abstract

This paper presents the findings of a project investigating the intended and unintended consequences of the contemporary performance driven Australian higher education sector (AHES) focusing on the performance mechanisms used and the performance information required. It is argued that the establishment of a performance-driven, market-oriented university system in Australia has created a context in which fiscal and economic performance indicators have become dominant in understanding the ‘performance’ of the AHES and of individual university’s activities. The paper analyses the AHES policy environment since the mid 1980s and outlines Australia’s performance-based funding approach to universities. The contribution of universities to the nation’s economy and the developing benchmarks and performance indicators used for annual reporting at system and institutional levels are described.

Several key areas of concern are identified which may be understood as either unintended or intended consequences of contemporary government policies. These are: (1) relatively short period for the government to move from full funding to partial subsidisation of universities; (2) created a distortion in the balance of disciplines and mix of students; (3) the quality of academic work within universities and the workload of staff; (4) the growing perception of the value of knowledge within society, in particular for the economic welfare of a country and its industry, has been at the source of the emergence of a ‘Knowledge Economy’; and (5) the reliance on traditional business financial and economic reporting frameworks, which are confined to financial monetary items and to providing information for only monetary performance-based decision making.

These issues touch the core of university purposes and operations and need thought and resolution to ensure the long-term success of Australian public universities.

Keywords: Australian higher education policy; performance information; accounting change; marketisation; new public management; knowledge economy.
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1. Introduction

Against a backdrop of increasing demand and decreasing government resources, the trend for higher education institutions in OECD countries over the past two decades has been to engage in markets, the ‘institutional and professorial market’ and ‘market-like efforts to secure external moneys’ (Leslie, 2001). The emergence of ‘entrepreneurial universities’ in some countries is one expression of this trend (see, e.g., Clark, 1998; Marginson and Considine, 2000). The Australian government has pursued the ‘market approach’ vigorously and persistently.

Just over a decade ago, Australia’s public universities were different institutions from today. In 1990, Australian universities were substantially academic driven, almost all funding came from the federal government, and student contribution to their study through Higher Education Contribution Scheme had just been introduced. In 2004, Australia’s universities are seen as a major contributor to Australia’s economy and export market. They are increasingly market driven, operating more like large businesses — increasingly generating their own income and focusing on costs and economic status. Only around one third of their base funding now is received from the federal government and their environment has become increasingly performance driven, within a quality assurance framework.

This transformation of the Australian Higher Education Sector (AHES) is the result of key public policy changes, which have changed both the direction, and operation, of Australian public universities over the past decade. Traditionally, government support for university teaching and research has been justified on the basis that it produces a ‘public good’, where specific benefits are widely dispersed and payoffs are not immediate. More recently, in line with international trends, the performance of the Australian economic has been linked to ‘successful outcomes’ emanating from knowledge intensive industries,
with an increasing focus on innovation and research. This change in language has impacted on publicly funded research and universities, as government statements emphasise ‘rate of return’, ‘return on investment’, ‘time to market’ and other terms identifying higher education as a private good (Guthrie, Vagnoni and Steane, 2004).

In the last decade, the most important policy development has been the withdrawal of federal funding, so that universities have moved from being full funded to partially subsidised. This funding re-direction has been accompanied the shift in orientation from academic driven to market driven. The change has been a fast one and, in policy terms, can be seen as a marked success for the federal government. Further, the policy direction is unlikely to change in the near future, with further performance improvement targeted at industrial relations and academic staff employment. Performance is likely to be tied to productivity improvements, increased private/student contribution and further market responsiveness on the part of universities. These policy directions require different forms of performance measurement and reporting.

Previous accounting research into performance indicators within the university sector can be classified by focusing on the level of interest from micro to macro, for instance, research that has examined the use and potentiality of cost control techniques in understanding and measuring individual department performance (Arnaboldi and Azzone, 2004; Cugini and Favotto, 2004; Jones, 1986; Pendlebury and Algaber, 1997).

Also, there is a group of researchers that have focused on performance information in University annual reports (Cameron and Guthrie, 1993; Coy and Pratt, 1998; Gray and Haslam, 1990) and extended performance reporting by universities (Carlin and Guthrie, 2004; Lawrence and Sharma, 2002).

Another group of researchers has focused on university internal and external performance and its indicators (Carrington, Coelli and Rao, 2004; Jones and Taylor, 1996), while a further group has focused on the move to corporatised and market based universities in Australia, New Zealand the United Kingdom (Parker, 2002, 2004; Craig, Clarke and Amernic, 1999; Pratt and Poole, 1999; Deem, 2004).
The introduction of processes and systems were integral parts of the framework for AHES structural reform. Broadbent and Guthrie (1992, p.11) refer to these processes and systems as ‘technologies’ — resourcing, budgeting, performance measurement, and metrics and reporting. The technologies are not independent, but are inter-related. Universities’ need to ‘plan operations’ hinges strongly upon the availability of resources and budgets and are subject to government policies. In turn, universities are expected to account for use of resources and overall performance.

Authors such as Broadbent and Guthrie (1992) and Laughlin and Pallot (1998) have demonstrated the value of moving beyond studying accounting from a purely ‘technical’ perspective and the importance of recognising that public sector accounting and management reforms are conditioned by, and in turn condition, social and organizational processes, practices and contexts. This paper follows the preferred contextual approach, illuminating a number of key themes with respect to the application performance management and performance information within the AHES.

This current study focuses on the structural framework and technologies associated with the performance of the contemporary AHES and that of individual universities. Before an argument can be made about the technical merits of various performance measurement systems, an understanding of the operational and policy context is critical.

Therefore, the main aim of this paper is to outline the establishment and mechanisms of a performance-driven Australian university system within the wider context of public sector reform. This is achieved by:

1. examining the contribution universities make to the national and regional economies;
2. outlining the present arrangement of funding universities, highlighting competitive, performance elements;
3. outlining the mechanisms used in the market-driven university environment and the development of performance indicators for the sector overall and that of individual universities;
4. exploring via a detailed case study the main performance initiatives at system and institutional level;
(5) including an analysis of recent issues with performance measurement and the determination of institutional efficiency;
(6) highlighting the effects of a performance-driven system on academic work and the changing nature of the AHES.

The paper is structured as follows. Section 2 outlines the central role played by ‘New Public Management’ (NPM) reform and how these reforms have influenced significantly the AHES. The paper then goes on, in section 3, to outline the mechanisms of performance funding of Australia’s public universities, while section 4 details studies of the economic value of the AHES, its national and regional contribution, and the developing financial sophistication within universities. In section 5, the paper examines the context and content of recent Australian public sector (APS) and higher education policy changes, focusing on those changes that have affected the AHES environment. Section 6 then presents a detailed case of current accountability and performance indicators established by the government for university performance reporting. Section 7 critically evaluates the main issues with the performance measures used and section 8 discusses key emerging issues for establishing the long-term, rather than short-term, success of the AHES.

2. Australian Public Sector Transformation the AHES

The APS has been under an intensive period of NPM reform since the mid-1980s, significantly influencing the AHES. These reforms have focused on efficiency and effectiveness, economies of scale, rationalisation, accountability, increased private contribution for public universities, and, development of greater market responsiveness (see, for example, Jones, Guthrie and Steane, 2001a, 2001b). A managerialist philosophy was promoted, which brought about a shift from a ‘civic’ culture, based on equitable consumption, towards a ‘business’ culture based on marketisation of activities (Broadbent, 1992; English, Guthrie and Parker, 2003).

Also in the past few decades, the APS has undergone some significant changes in financial management practices (Jones et al, 2001a, 2001b). At least five different categories of change are apparent in this type of reform (Olson et al, 1998). These include
(see, Guthrie, Parker and Shand, 1990; Olson et al, 1998; Jones, Guthrie and Steane, 2001a, 2001b; Guthrie et al 2004, forthcoming):

- the development of commercially based, market oriented management systems and structures to deal with the pricing and provision of public services;
- the development of a performance measurement approach; the devolution or delegation of budgets;
- changes to internal and external public sector audits, notably in terms of monitoring service delivery functions; providing reviews of efficiency and effectiveness; and
- changes to performance reporting systems

This NPM philosophy, with its accompanying changes, has focused on gaining optimal performance in return for the resources needed to achieve the goals pursued by public sector agencies and their members. The thrust of this emphasis is on a concept of ‘public accountability’ for cost control, efficiency gains and productivity improvements, and it has affected all areas of the Australian public sector.

In the last decades in Australia, there have been a number of significant changes in public sector management and the way in which it has been organised and managed. Jones et al, (2001c, p. 5) argued that all sorts of promises have accompanied the ‘new era’ of Australian public management reform. These include: transition to smaller, less interventionist and more decentralised government; improved public sector efficiency and effectiveness; greater public service responsiveness and accountability to consumers and citizens; increased choice between public and private providers of public services; an ‘entrepreneurial’ public sector more willing and able to work with business; and improved economic performance.

Adherents of these recent market-driven reform movements demonstrate strong commitment to contestability, privatization, decentralization and individual-centered responses to public needs (English, Guthrie and Parker, 2003). These philosophical commitments signal a major strategic and cultural shift in the way advanced public sectors seek to define the public sphere, and the roles of citizens and employees within it. It is clear that the AHES has changed significantly during this period, involving
significant transformation in service delivery and re-structuring (Neumann and Guthrie, 2004).

3. Estimating the Economic Value of Australian Universities

Accompanying the policy push to reduce government outlays on universities and increase the contribution from private sources, there has been the argument that Australian universities are a key component of the nation’s economy. Universities, research, innovation and knowledge are argued to be central to the transition from a production to a knowledge economy and the creation of a nation’s global competitiveness.

Thus, given the strong policy focus on the value of universities to the nation, there has been some limited attempt to measure just how much universities contribute to Australia. A study commissioned by the Business Higher Education Round Table (BHERT) group (Cabalu, Kenyon and Koshy, 2000) estimated that each year’s graduates contributed around $A9.2 billion in additional human capital to the country while university research contributed $A2.2 billion to industry. Further, the study found that expenditure by universities and their students annually returns $A10.6 billion to the Australian economy and creates $A22 billion of economic activity. University staff add $A70.5 million through consultancy income. The response by BHERT was that universities should no longer be seen as a ‘cost’ but viewed as an ‘investment’ (Jackson, 2000).

With increasingly large and diverse budgets, universities are changing their approach to financial operation. Strategic planning and risk management are taking greater prominence when the annual revenue in some universities can exceed $A1 billion. Whereas financial management has traditionally been the responsibility of an academic, the trend now is to appoint a non-academic professional with extensive financial experience to the university senior executive. A recent profile of some chief financial officers in the major universities highlighted their extensive private sector experience prior to becoming responsible for universities with annual revenue ranging from $A400 million to $A1 billion and total asset bases ranging from $A1 – $A3.4 billion. Universities are seen to be operating much more like big business than even a few years
ago, with a need for business accounting in financial management and reporting (Perry, 2004).

The scale of budgets and assets reported and the changes in financial management underscore the massive move from government supported to government subsidised universities that has taken place within a relatively short time.

4. Performance Funding of Australia’s Public Universities

Currently Australia has 36 public universities, three private universities and several self-accrediting higher education institutions. Over 95% of the over 900,000 students in 2003 are at public universities and just over 200,000 of these students are international students (DEST, 2004).

Education under the Australian constitution is a state responsibility and thus all universities, whether public or private, are established by state acts of parliament. Universities need to report to state parliament annually and are subject to state government financial audits. However, despite state legislative responsibility, full funding responsibility for all public universities was assumed by the federal government in 1974 with the abolition of student fees. This full funding agreement was renewed with state governments in 1991, following the abolition of the binary system of higher education and the introduction of the Unified National System (UNS). There are 42 institutions eligible for federal government operating grants. This eligibility is determined by the listing in the Higher Education Funding Act 1988 (DEST, 2003).

When the federal government first assumed financial responsibility for universities, the agreement was to provide full funding to institutions. At that time student fees were also abolished. The renewal of financial responsibility in 1991 again committed the federal government to full funding, however, there has been a progressive move from full funding to support or subsidisation of universities in accordance with the policies discussed in the sections above.
At present, the government provides several different grants to support the operation of universities. These grants fall into three broad categories: (a) negotiated grants between university and government; (b) institutional performance-based funds; (c) sector-wide competitive funds. In addition, there is private income comprising primarily student fees and revenue raised through other means such as companies. The balance between these diversified sources of university funding has steadily shifted from government to private income in the past decade.

An examination of the distribution of university income sources between 1992 and 1999 showed a trend in which universities gained less than 50% of their funding from government (BHERT, 2002). In 1998 44% of expenditure of Australian universities was funded by government funds on average (Cabal et al, 2000). This trend has continued. In its 2003 annual report, one university describes itself as one of the least dependent universities on government funding” with only 29% of its income from federal government sources for its operating costs (Macquarie University Annual Report, 2003, p. 80). Similarly, two of Australia’s largest and most prestigious (Group of Eight) universities show federal government funding as comprising less than 30% for federal government operating income (Monash University 2002-2003 Annual Report; University of Sydney, 2003-200 Annual Report). In fact, for a large number of Australia’s public universities, government funds, excluding research funding, are in the range of 25-50% of total expenditure.

In the AHES the main base grant for universities is the operating grant which covers teaching, capital and indigenous support programs as well as other areas targeted by the government (e.g., workplace reform). The amount of each university’s operating grant is arrived at through a negotiation process between the university and officers from the Department of Education, Science and Training (DEST) and is based on an institution’s profile. Profiles are part of the legislative framework for the allocation of funds and offer an effective mechanism for the government to monitor a university’s finances. A university profile includes the mission statement, strategic plan, institutional quality assurance processes, teaching and research information. Student numbers by discipline
and course level predominantly determine the amount of the operating grant and target student loads are agreed as part of the profile assessment. Institutional performance in relation to the operating grant, in particular student load and outcomes, form part of the extensive indicators that universities need to report on annually, and is discussed further in the section on performance indicators below (DEST, 2004).

Research funding is competitive and performance based. There is block funding for research and research training and, in addition, there are peer-reviewed competitive grants for research. Block, performance-based funding is tied to each university’s Research and Research Training Management Plan, which forms part of the profile documentation referred to above. Universities receive funding through the Institutional Grants Scheme (IGS) on a performance basis, which uses a formula that comprises research income (60%), publications (10%), and higher degree research student places (40%) (DEST, 2004). The Research Infrastructure Block Grants Scheme (RIBG) supports areas of research potential, research infrastructure costs, and is based on a university’s share of Australian Competitive Grants income. Finally, the Research Training Scheme (RTS) funds universities for research students and an institution’s allocation is determined by its performance in numbers of research students completing within the allocated government time (50%), research income (40%) and research publications (10%). Thus, all research funding is determined by institutional performance on a combination of inputs (grants and student places) and outputs (publications and student completions).

A further major source of funding income to universities is through student fees, in particular through the (HECS) adopted in 1989. HECS is a contribution by students to the cost of their education. It is a tuition charge, in effect a loan and a tax at the same time, with payment deferred until a student’s income after graduation reaches a particular level. However, the number of HECS student places for study in universities is tightly controlled by the government, thus leaving no scope for universities to increase student places. There has been some relaxation of this policy from 1998, with universities able to charge local students full fees for places additional to those HECS filled places.

1 Workplace reform is a key government policy reform with the aim of increasing employment flexibility through a change in tenure and increasing the number of casual academic positions and including
The fee level is determined by the university and can be set by the institution to a level which it considers the market can pay. From 2005, there is a cap on local fee paying students set at 35% of a university’s HECS places. To assist students within the fee paying category there is also a new government loan system, FEE-HELP, to enable students to borrow up to $50,000 to assist them in paying for full fee courses.

The reason for increased revenue for universities since the early 1990s is an increase in international student fees and fees for non-research postgraduate courses, and, to a lesser extent, the introduction of full fee professional doctorate programs. Since numbers of these students are not tied to federal government places, universities have rapidly expanded their offerings in these areas. This has included establishing university campuses and programs off-shore to cater for the demand. In 2003, there were 929,952 students in Australian universities of whom 210,397 were international students (DEST, 2004). The education export industry is a lucrative one for Australia. In 2002, education exports reached $A5.2 billion, and were estimated to be $A5.7 billion for 2003 (DEST, 2004, p.29) making it one of the largest export industries in Australia.

It is important to understand that much of the increased private revenue in universities consists of a transfer from taxpayers to students through HECS and full fee courses. It could be argued that the shift in funding balance from government (and taxpayer) to student has led to a preoccupation with gaining more short-term revenues to compensate for the decrease in government re-current funding.

In summary, Australian universities receive their funding either through performance-related income from the government, student fees or other income. By far the largest is student fees with government funding declining steadily as private income rises.

5. Impacts on the AHES University Environment

Australian public universities are reliant on government funding, albeit to a decreasing extent, but also autonomous of government. Unlike universities in the US, income from endowments and donations is ‘lumpy and low’, representing approximately 3.4% of total performance pay based on indicators such as student satisfaction ratings.
income to the sector (Gallagher, 2000, p.18). Like many other countries, the push into commercialisation of academic work came from changes in government policies commencing in the late 1980s (Gray et al, 2002; Neumann and Guthrie, 2002).

The effect of these policy changes has been to decrease public funding while increasing public access to higher education and deregulating the ‘education market’, specifically in regard to allowing universities to charge fees to international students and students of some undergraduate and postgraduate programs. Over the decade 1991 to 2000, international student enrolments increased by 293% and postgraduate coursework students by 473% (DESTraining, 2003a, p.285).

Despite increases in income from non-government sources (e.g., entrepreneurial activities), especially fee paying students, the internal accounting costs in raising these funds are high in terms of expenditures on marketing, increased administration, services and travel, as well as opportunity costs such as time away from ‘core activities’ (Marginson, 2003, p.11).

Other unintended consequences of this marketisation and changing external funding arising from these AHES management practices are:

- the intermingling of disciplines (Lindsay, p.1995);
- the breakdown of disciplinary boundaries to provide more manageable spans of control (Bessant, p.1995);
- increased casual staff (DEST, 2003a);
- flexible remuneration packages (Stillwell, 2003);
- flexible academic calendars (Baldwin and McInnes, 2003); and
- the rise of the self-serving academic (Lindsay, 1995).

This latter factor refers to an increase in individualism as academics interpret excellence in narrow and more self-serving ways, exploiting for themselves the new entrepreneurial culture of the university (Lindsay, 1995; Lindsay and Neumann, 1988; Henkel, 2001; Gray et al, 2002).
It is no coincidence that this increase in entrepreneurial activities corresponded with a rise in managerialism and hierarchical authority within higher education management (Parker, 2002). Government policies to change and deregulate the system’s governance were accompanied by both the rhetoric and financial inducements for universities to adopt more businesslike approaches to managing their institutions. Initially, the adoption of managerialist structures were viewed as “a way of harnessing universities more effectively to [the government’s] political and economic goals” (Lindsay, 1995, p.19), however, as universities settled into the new regimes, managerialism and entrepreneurial activities often became reinforcing of each other. For instance, Gallagher, (2000, p. 25) states that:

The tightening liquidity position for many universities, the toughening of competition in both domestic and overseas markets and the need to raise external income to fund the salary rises they have agreed to pay their academic and general staff are, together, causing a greater concentration on enterprise management.

As indicated by Parker (2002), the AHES university environment has changed significantly over the past decades, with government funding reduced in real terms, pressures for larger student intakes and for higher pass rates, a dramatic shift in university funding sources towards fees earned from teaching international students, associated larger class sizes, multi-campus and on-line delivery, flexible entry standards, compressed and accelerated degree programs, greater recourse to adjunct contract lecturers, and continuous internal cost reduction pressures.

Associated with these changes has been a commensurate increase in academics’ teaching and administration workloads, some integrated into their ‘normal’ prescribed university duties and some undertaken as above-standard workloads for additional fees or salary supplements (Healy, 2003; Maslen, 2003). The focus of university management is squarely on generating non-governmental revenue through teaching program fees, research grants, contract consultancy and commercialisation of intellectual capital.

The commercialisation and corporatisation of AHES universities has brought to centre stage formal strategic management and business planning processes, cost control, revenue generation, and key economic and accounting performance indicator based management
Specifically, the fundamental elements of the financial management reforms adopted in the AHES over the past decade are: a full accrual approach to planning, budgeting, resource allocation decisions and reporting; fully-costed service provision; a focus on the outputs/outcomes of departments; and a change in incentives underlying management of total resources available to departments. In seeking to construct performance standards within the AHES a variety of mechanisms have been used, including accounting technologies as benchmarking, best practice and performance indicators.

This contemporary AHES, Parker (2002) argues, now privileges growth in student numbers and non-government revenue generation, labour cost minimisation, falling student entrance scores and failure rates, and commercialisation of teaching and research activities. He identifies an environment in which an individual academic’s survival depends on saving time and labour spent on teaching and research in order to meet rising university management workload demands and accompanying performance targets.

The resultant performance indicators have now embraced the management accounting ideals of efficiency and cost control and economic notions of productivity as reflected in DETYA documentation and various other official statistics of the AHES.

In summary, the AHES university environment has changed significantly over the past decades, with government funding being reduced in real terms, pressures for larger student intakes and for higher pass rates, a dramatic shift in university funding and the commodification of academic labour. Associated with these changes has been the reformulation of what constitutes ‘performance’ within the AHES, according to individual universities and key stakeholders within universities.

6. AHES Reporting Performance: Measures and Indicators

Given the scale of contribution universities make to the nation’s economy, and in line with the accountability mechanisms that form part of the policy context outlined above, the reporting of the AHES’s performance, as well as the performance of individual institutions is of major importance. In contemporary times, performance monitoring
forms an important aspect of measuring the success of government policy. It establishes whether an individual university is meeting government policy objectives in terms of its productivity and financial performance relating to operations and academic activities. As will be indicated below, there are detailed annual statistics on teaching, research, staff profiles, students and their characteristics, student satisfaction and employment, and university finances, which are published to show overall system performance, as well as that of each individual university.

Over the past decade, the federal government has progressively developed several different national surveys to measure various outcomes in a manner that provides a view of the university sector’s performance over time. Officially, these mechanisms and measures allow for institutional comparisons of performance, and are used by universities to monitor their own performance, make internal developmental adjustments to improve their performance ratings, and to demonstrate public accountability. Many of these surveys relate to students and teaching. For instance, there is the Course Experience Questionnaire (CEQ), an annual survey of all graduates since the early 1990s of their satisfaction with their teaching and learning experience. Connected with this survey is the Graduate Destinations Survey (GDS), which annually surveys graduate continuation with study or participation in the workforce and starting salary. Since the late 1990s, there is also the Postgraduate Research Experience Questionnaire (PREQ), an annual survey of all graduating research degree students and their satisfaction with their research degree experience. The results of these surveys are published and there are analytic comments provided on the outcomes for each year by the Graduate Careers Council of Australia, the body responsible for the administration and publication of these surveys.

These surveys and the rating indicators that they provide relate to perceived satisfaction with teaching and learning outcomes. They also serve as a form of public accountability, with annually published ratings at aggregate system level and individual institution and also discipline levels. The use and interpretation of such rating information is not, however, a straightforward issue, nor is it politically neutral (see, e.g., Neumann, 2000, 2001).
In addition to these national surveys, DEST has undertaken and commissioned a variety of benchmarking and performance indicator studies to measure and determine sector and individual institutional performance across a broad range of teaching and research activities (see, for example, DETYA, 1997, 1998, 2000). Among the studies at this time was a benchmarking manual (McKinnon, Walker and Davis, 2000) to assist universities in the assessment and reporting of their performance on a wide set of areas. The manual outlines around 67 performance indicators that can be used covering the following: governance, planning and management; external impact; finance and physical infrastructure; learning and teaching; student support; research; library and information services; internationalisation; staff. The stated aim of the manual is to enable an institution to determine its performance and initiate improvements, to allow groups of universities to compare their performance with each other, and to allow a university to establish its competitive position relative to other universities.

The most recent federal government review and direction setting exercise for Australia’s universities, Backing Australia’s Future (Nelson, 2003), requires universities to assess and indicate their performance in detail in an institutional assessment framework. The tables 1 to 6 below, illustrate the scope and groups of indicators of this assessment framework. For each indicator there can be a variety of different sources of information and data. They are grouped under four broad categories: organisational sustainability, achievements in higher education provision, quality outcomes, and, research. Within each of these there may be a number of sub-categories, for example within higher education provision there are four sub-categories of: student load, staff profile, equity, indigenous education. Each of these subcategories then has a number of indicators. An extensive, but not comprehensive, example of these indicators is shown in the tables below and provides a guide on the type of indicator, a focus on fiscal reporting, and a description of the outputs and outcomes currently required by the federal government.
### Table 1: Financial viability

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Use / rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial performance</td>
<td>trends in financial performance of universities</td>
</tr>
<tr>
<td>Financial position</td>
<td>indicate soundness of financial position</td>
</tr>
<tr>
<td>Cash flows</td>
<td>show cash movements between particular points in time</td>
</tr>
<tr>
<td>Risk analysis</td>
<td>financial performance where institution exposed to risk</td>
</tr>
</tbody>
</table>

### Table 2: Teaching and learning: Student load and equity

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Use / rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student load by category</td>
<td>show shifts in load and possible future movements</td>
</tr>
<tr>
<td>Student load % of sector</td>
<td>institution share of student load compared with others in sector</td>
</tr>
<tr>
<td>International student load as % of institution’s load</td>
<td>institutional openness to international market, over time, compared with sector</td>
</tr>
<tr>
<td>EFTSU (Equivalent full time students unit) against targets</td>
<td>indicates shift in under and over enrolments compared with set target number</td>
</tr>
<tr>
<td>Equity</td>
<td>provision of access and support to targeted groups, compared to sector</td>
</tr>
<tr>
<td>Indigenous</td>
<td>provision of access and support to indigenous students, compared to sector</td>
</tr>
</tbody>
</table>

### Table 3: Teaching and learning: Staff statistics

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Use / rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time equivalent staff</td>
<td>profile of staff, distribution between functions, indicator of staffing structure and overall mission</td>
</tr>
<tr>
<td>Staff by function</td>
<td>proportion of academic and other staff, indicator of staffing structure and overall mission</td>
</tr>
<tr>
<td>Staff casualisation</td>
<td>indicates reliance on casual teaching</td>
</tr>
<tr>
<td>Academic staff age profile</td>
<td>indicates age profile, workforce planning</td>
</tr>
<tr>
<td>Academic staff level profile</td>
<td>balance across academic levels, workforce planning and staff cost</td>
</tr>
<tr>
<td>Academic staff qualification</td>
<td>appropriateness of qualifications, teaching quality</td>
</tr>
</tbody>
</table>
Table 4: Quality of outcomes

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Use / rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attrition</td>
<td>institutional drop out rate</td>
</tr>
<tr>
<td>Progress</td>
<td>progress rate of bachelor level students and proportion of units passed</td>
</tr>
<tr>
<td>Course experience</td>
<td>indicates how graduates assess the quality of their teaching and educational experience; adjusted version to make sector comparisons</td>
</tr>
<tr>
<td>questionnaire</td>
<td></td>
</tr>
<tr>
<td>Graduate destination survey</td>
<td>employment and salary in the marketplace, continuation with studies; adjusted version to make sector comparisons</td>
</tr>
<tr>
<td>Student-academic staff ratio</td>
<td>ratios both include and exclude casual staff, can indicate economic efficiency or teaching quality</td>
</tr>
<tr>
<td>Tertiary entrance score</td>
<td>show student demand and perceived course quality</td>
</tr>
</tbody>
</table>

Table 5: Research and research training: Achievements in research and research training

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Use / rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research income</td>
<td>shows institutional success in research funding</td>
</tr>
<tr>
<td>Research publications</td>
<td>publication output indicated within set categories</td>
</tr>
<tr>
<td>Research training scheme students by field of study</td>
<td>indicates fields of study for RTS students, annual movements</td>
</tr>
<tr>
<td>Research students by category</td>
<td>shows type of research students within a university</td>
</tr>
<tr>
<td>% students in high cost places</td>
<td>shows whether profile of students is changing</td>
</tr>
<tr>
<td>Research student completions</td>
<td>shows number of completions within institution and balance between RTS and other students</td>
</tr>
<tr>
<td>Share of national completions &amp; separations</td>
<td>comparison across institutions of RTS separations and completions</td>
</tr>
<tr>
<td>Research training scheme over and under allocations</td>
<td>shows whether institution has fully utilised RTS allocations</td>
</tr>
</tbody>
</table>

Table 6: Research and research training: Quality of outcomes

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Use / rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research intensity</td>
<td>shows how performance-based research funding, relative to funding of teaching activity trend over time and compares with other institutions</td>
</tr>
<tr>
<td>Research income and publications per staff member</td>
<td>shows the research earnings and publication output per staff member</td>
</tr>
<tr>
<td>Research income per student</td>
<td>shows the relative resourcing of the students’ research environment at institutional level (would prefer faculty level but not yet possible)</td>
</tr>
<tr>
<td>Research income from donations and bequests</td>
<td>shows extent to which universities are accessing funds from these sources.</td>
</tr>
</tbody>
</table>

(Source for all tables: Nelson / DEST, 2003)
In summary, the scale of reporting and the detail required highlight the level of government scrutiny and accountability of universities’ performance in return for an increasingly small proportion of their annual funding. Further, the information and indicators of performance set by government are not unproblematic.

7. Issues with Current AHES Performance Indicators

The development and use of performance indicators is far from straightforward, raising both political and technical questions. Key considerations are who develops indicators, how they are reported, who assesses the information and the purpose for which the information is used (Guthrie, 1993). These areas are not politically neutral (Guthrie, 1998b). It is important to consider the degree of control a university has over the selection of inputs and outputs and the role of the regulatory environment on the choice of inputs, outputs and outcomes. In addition, there are technical matters concerned with the reliability and validity of the information collected and the level of technical sophistication in isolating and reporting mostly highly complex areas. This section outlines several of these important issues.

First, Garlick and Pryor (2004), in a recent study, examined the success and degree of use of the McKinnon et al manual discussed above (McKinnon, Walker and Davis, 2000). The study had the aim of adding missing benchmark indicators to the McKinnon et al manual and of evaluating the manual’s use by universities with feedback for further development. The study, however, found that the benchmarks were not comprehensive enough to capture the diverse activities within universities, particularly with the wide range of university types in Australia. It also found that, in practice, the benchmarks were difficult to calculate and that they were too rigid and prescriptive.

Second, the tables above show the type of performance indicators that have been developed by the federal government for the contemporary assessment of the AHES and university performance. The performance indicators developed are, of course, not always accurate and can allow for different interpretations. These issues are readily acknowledged by the government (Nelson/DEST, 2003). For example, the staff
casualisation indicator could indicate the degree to which there is workplace flexibility — a highly desirable federal government policy drive — within an institution. However, it is recognised that in regional universities, there may be labour supply issues. The GDS and CEQ rating indicators for a university could vary between years for reasons associated with sample sizes or differences in the mix of course areas rather than university teaching quality. Further, the indicators for tertiary entrance scores and over and under allocations in the RTS are acknowledged by the government as unreliable due to difficulty in obtaining accurate data.

Third, Carrington, Coelli and Rao (2004) argue that there is a confounding of processes, inputs and outputs and lack of defined criteria. Despite the multitude of performance indicators, it is argued that there is no systematic framework to interpret the data and information presented and that judgements of performance of individual universities are impossible to make. They have attempted to address some of these issues in their calculation of university efficiency and productivity, but argue for the need to establish sound performance indicators as has been achieved for schools and vocational education.

In summary, it is important to remember that the teaching and research activities of a university and the quality of its academic staff represent highly complex challenges for the formulation of performance indicators and their reliable measurement. In education and for educationalists, the quality of activity is paramount with processes often more important than outcomes for the development of learning. Yet performance indicators are mostly quantitative capturing the peripherals of an activity (e.g., cost) rather than the activity and its processes. The attempts to address flaws within particular indicators, or the development of more appropriate and well-defined ones for complex activities, are important in the market climate dominating the AHES.

8. Issues for Consideration and Resolution; Future Considerations

This paper has outlined the establishment of a performance-driven, market-oriented university system in Australia. It has analysed the AHES policy environment since the mid 1980s and has outlined Australia’s performance-based funding approach to universities. The contribution of universities to the nation’s economy and the developing
benchmarks and performance indicators at system and institutional levels used for annual reporting have been described. Issues with choice of indicators, their reliability, and interpretation of results have been discussed. There remain, however, some fundamental concerns and questions about the direction of the AHES and the strong, aggressive market/performance-driven approach adopted in Australia. Several of these are now considered.

The first area for consideration is that the extent of performance-based funding universities receive from the government, and the success of most public universities in building alternative sources of revenue, can be seen as a marked policy success. It is a remarkable achievement in a relatively short period for the government to move from full funding to partial subsidisation of universities. University responsiveness to marketisation has been strong. The issue is whether this short-term success will in fact translate to a long term benefit. There is some evidence from the United States (Robst, 2001) that a reduction in government funding and an increase from student fees does not result in more efficient universities. Indeed, Robst found that universities with a smaller government funding contribution are not more efficient than those universities receiving more government financial support. There is further evidence that smaller decreases in government funding produce more efficient universities than having a large decline in government funding. Further evidence of concern about the long-term standing and success of Australia’s universities comes from international comparisons.

The amount of government funding per student to Australia’s public universities is less than that of most other OECD countries. In 2001, Australia’s Group of Eight universities received markedly less government funding than comparable universities in Canada, Korea, Britain, the United States, Hong Kong and Japan (BHERT, 2002). A similar concern comes from international performance comparisons showing that Australia’s knowledge capacity has been steadily declining since 1995 compared with other OECD countries (Considine et al, 2001). The evidence shows that other countries are moving to greater public investment in education and research while Australia is still pre-occupied with privatisation and marketisation policies. The most recent policy statements by the federal government give every indication for this trend to continue.
The second area for consideration is the need for public universities to focus strongly on raising revenue in the context of declining government support, creating a distortion in the balance of disciplines and students. As discussed above, the growth has been in international students and local postgraduate coursework students. During the 1990s, local business graduates increased by 107% and international business graduates increased 729%. By 1998 local business graduates increased by 32% compared with local graduates in all other disciplines where the increase was a mere 1.5% (Considine et al, 2001). Such a strong distortion in fields of study has implications for diversity. In an earlier paper we argued the importance of diversity to maintaining quality and flexibility in universities in a globalised knowledge economy. We argued for the centrality of diversity of student, diversity of research approach and type and diversity of discipline and institution (Neumann and Guthrie, 2004).

The third area for consideration is the quality of academic work within universities and the workload of staff. The discussion in this paper has centred on performance indicators at system and institutional levels. A further area of consideration, though beyond the scope of this paper, is the use of performance indicators at the level of the individual academic. It will also be an area of increased focus over the next years in Australian universities as the government policy push for performance monitoring and reporting, in line with performance funding, increases. Already, a component of each university’s operating budget comprises funding specifically tied to industrial relations reform to bring about flexibility and greater differentiation in the workplace.

At present universities can receive up to 2% of the salary component of their operating budget, conditional on the implementation of management, administration and workplace practices supported by the government (DEST, 2004). The current government’s (re-)election policies continued with industrial relations reforms in universities and introducing performance-based pay for teaching and research — two issues likely to dominate universities in the immediate future (Maiden and Perry, 2004). The contentiousness of the use of some indicators for teaching quality, in particular, already agreed to be ambiguous or fluctuating in reliability (see discussion in section 7), is set to intensify. However, such moves will not be new. For some years, the work behaviours of academic staff in relation to research have been strongly influenced by government
performance rewards in competitively funding university research and research training (see, Neumann and Guthrie, 2002, for detailed discussion). A key issue will be the further separation of teaching and research roles of academics with differential payment and employment conditions as well as institutional funding directly connected to measured contributions in teaching and research activity. Evidence of ‘selectivity’, in which academics concentrate on those teaching and research activities measured by performance indicators has already been reported (Taylor, 2001). Further, the time and accounting costs to universities in institutional performance reporting and in obtaining external funds is already large. This will only increase if the detailed monitoring of individual staff performance according to criteria set by the government is to proceed.

The fourth area of concern is that the insufficiency/inadequacy of quantitative indicators will only continue, given the complexity of advanced teaching and research and the focus of educators on learning processes rather than outcomes. The recognition of the importance of intangibles in teaching and research (Neumann, 1992, 1993, 1994; Clark, 1995) and growing wider recognition of the importance of intangibles such as intellectual capital (IC) for innovation and creativity and the competitiveness of organisations (Guthrie, 2001) could be influential in changing the course of performance measurement. Thus IC needs to be ‘managed’ and measured in order for an organisation or industry to be able to fully account for its value and economic performance (Guthrie, 2001; Petty and Guthrie, 2000). The identification, measurement and reporting of these intangible assets is attracting increased attention (Guthrie, Petty and Johanson, 2001; Department of Industry, Science and Resources, 2001).

To be able to achieve the successful measurement and reporting of intangibles and IC, the traditional financial and economic reporting framework, which confines itself to monetary items and providing information for economic performance-based decision making, will need to be changed. Within the context of public sector reporting frameworks, information on both economic and non-economic performance should be reported. This would enable public sector entities to provide a more complete account of their performance in the areas of value creation and sustainability. Although recently there has been the development of extensive literature on non-financial performance reporting within the public sector (see, for example, Carlin and Guthrie, 2001),
insufficient attention has been paid to the possibilities associated with the adaptation of IC reporting frameworks for use within the public sector. Extended performance can be better illustrated via the reporting of IC, social, and environmental information, and this is as important in public sector applications, as in other sectors of the economy.
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