Institutional Research and the Monitoring of Institutional Performance

9

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Introduction

The measuring and monitoring of institutional performance is becoming an increasingly important part of the role of Institutional Research offices in Southern African universities. This is not a trend peculiar to the region, but follows the experience of universities in other parts of the world (Calderon & Webber 2015:7).

In general terms, the drivers of this tendency are globalization, the massification of higher education, concerns about the quality of higher education, fiscal constraints, and concomitant calls for greater efficiency and greater accountability on the part of higher education institutions (Altbach, Reisberg & Rumbley 2010:35, Hazelkorn 2015:3).

For purposes of this chapter, both a broad and a narrower view of "institutional performance indicators" will be employed. On the broader view, any measures that relate to university activity could be considered performance indicators, provided that they report over time and so give an indication of trends. Examples of indicators include student headcount enrolments, student pass rates, and the number of research publication units. On the narrower view, performance indicators require that there should be some kind of target or benchmark against which the institution measures itself or is measured. So, for example, South African universities measure their performance relative to their Student Enrolment Plans as submitted to the Department of Higher Education and Training (DHET) or more recently against the targets in their Annual Performance Plans as submitted to DHET.

A distinction is made between various levels at which performance in higher education may be measured: system-wide, institutional, and individual. In this chapter the drivers of system-wide (or national) monitoring are considered first. Then the main types of institutional performance monitoring are briefly discussed, followed by a review of the monitoring and reporting of performance by the institutions themselves. Some national reporting initiatives are noted, and efforts to measure institutional performance across national boundaries.

The level of reporting on individual performance is not covered in this chapter (see, however, chapters 12 and 13). Individual reporting might include the tracking of performance of individual staff members through a performance management system, the performance of individual students within an electronic learning management system or the likely performance of students via predictive analytics.

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The research question which this chapter seeks to answer is: How is the reporting of the universities' Institutional Research offices responding to the shift in Southern African higher education towards performance-related reporting? I will use a review of the websites of public universities in South Africa, Namibia and Botswana and a survey of their Institutional Research offices to seek answers to this question.

The picture that emerges is one of a higher education sector which is monitoring performance indicators through its Institutional Research offices for planning and management purposes; a sector which is being nudged in the direction of greater transparency by government regulation, but which is generally not eager to share its performance indicators with the general public.

Drivers of Institutional Performance Monitoring

Institutional Research (IR) has always been concerned with performance – whether a university has interpreted the role of its Institutional Research office in narrow terms, related to surveys on some aspect of institutional life or whether the role of this office was more widely interpreted to include the provision of management information or business intelligence to the university community. What has changed in recent years is the context within which the monitoring and reporting role of Institutional Researchers occurs (Lasher 2011:33ff).

In Europe, the change has been interpreted as a shift towards the "Evaluative State". Neave (1998:273-274) traces the development of the Evaluative State back, in part, to the general public expenditure crisis of the early 1980s and consequent demands for greater efficiency in higher education.

> Once the concept of efficiency gained operational substance (for it could not fail to gain the plaudits of politicians), such knotty issues as undergraduate drop out, failure to complete on time, qualifications inappropriate to a changing labour market, the factors contributing to graduate unemployment, very quickly entered the fray (Neave 1998:273).

Also at play were "issues of enduring structural importance implicit in mass higher education", including the "stop/go" rhythm of higher education reform. The Evaluative State was required to speed up the administrative time required for reform to take root and to ascertain that it had done so. This gave rise to a system of institutional self-regulation and an "increasingly sophisticated system of accountability to public authority", with the emergence of powerful, specialist "intermediary bodies" for purposes, among others, of quality assurance and audit (Neave 1998:274-275).

In the United States, a report by Gaither, Nedwek & Neal (1994:iii-iv) notes a movement among the various states during the 1980s to assessment and accountability, with "a litany of studies" lamenting the poor condition of undergraduate education. The states began to move from formula funding to funding of "outcomes", "results", and "performance". This was followed by a shift in the 1990s from voluntary institutional improvement to a system of mandated public accountability. The concepts of performance indicators and quality

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assessment, the authors say, were becoming "an integral part of an emerging international method on how to manage education, with indicators serving as signals or guides for making national or international comparisons in educational quality, effectiveness, and efficiency". The main advantage of such performance indicator systems, they say, is their usefulness "as points of reference for comparing quality or performance against peers over time, or achievement against a desired objective".

Similar tendencies to those noted in Europe and the USA were discernable in South Africa following the first democratic elections in 1994. Perhaps the most pressing need with regard to higher education in South Africa after the transition to democracy was the need to signal a break with the past. This led to the establishment by President Nelson Mandela in 1994 of the National Commission on Higher Education (NCHE) to "preserve what is valuable and to address what is defective and requires transformation" in higher education (NCHE 1996:1) (quoted in Cloete *et al*. 2004:8.) According to Cloete *et al*. (2004:1), there was an assumption that change in higher education could be driven by a participatory policy formulation process, implemented by a new, progressive bureaucracy.

In South Africa, the first (informal) phase of higher education transformation started with the National Education Policy Investigation (NEPI 1993), and the ANC's 1994 Policy Framework for Education and Training (Centre for Education Policy Development 1994). It begins formally with the appointment of the National Commission on Higher Education in 1995 (NCHE 1996), the release of the government Green Paper and White Papers in 1997 and the promulgation of the Higher Education Act 101 of 1997 (Republic of South Africa 1997).

Reality, however, proved more complex than expected. "Studies of policy implementation showed convincingly that policy outcomes were hardly ever the same as the policy intentions" (Cloete *et al*. 2004:11). The authors argue that there was a shift from a participation approach to "a market approach overlaid with deregulation and flexible mode features" (Cloete *et al*. 2004:303). These shifts were influenced by global developments; in particular, the emergence of a new world order from the late 1980s, "marked by the collapse of communist regimes and the increasing political hegemony of neo-liberal market ideologies", and globalisation (Cloete *et al*. 2004:7). The relationships between the three players in the "analytic triangle" of State, Institutions, and Society were shifting.

> "In South Africa there is a tension between the higher education reform agenda which emphasizes national topics such as redress, democratisation and equity, and the global reform agenda which promotes issues such as efficiency, effectiveness, competition and responsiveness.… As is the case in most other countries, in South Africa the national higher education agenda has been made subservient to the global reform agenda." (Cloete *et al*. 2004:12)

One of the more significant transformative initiatives was the report by the National Working Group (NWG), released in February 2002. The NWG had been appointed in March 2001 by the then Minister of Education, Professor Kader Asmal, to advise on the restructuring of the higher education landscape in South Africa.

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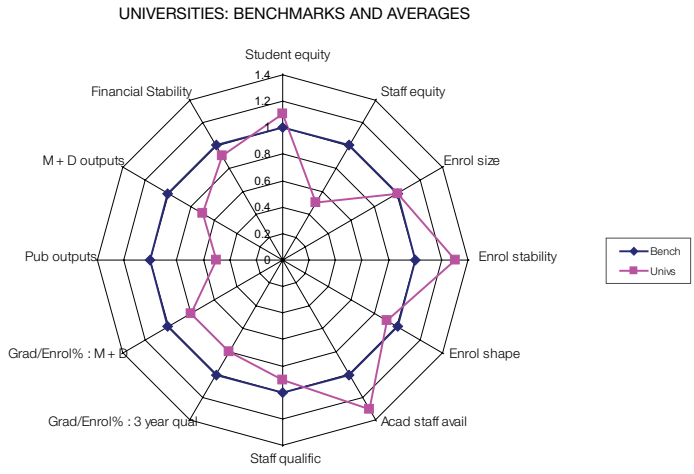
The NWG report provided the foundation for the mergers of higher education institutions initiated by the Minister and implemented from 2004 to 2006, reducing the number of institutions from 36 to 23 (now 26) and creating the current institutional types (Traditional Universities, Universities of Technology, and Comprehensive Universities). The mergers were an ambitious and costly project, the full implications of which are still being worked through by some of the affected institutions.

One of the side-effects of the NWG report was a sharpening of interest among higher education institutions in the development and use of performance indicators. The "fitness-for-purpose" approach of the NWG and the resultant data on institutional performance that it adduced were ground-breaking.

Bunting and Cloete (2004:61) note three key methodological assumptions of the NWG report. Firstly, sets of properties that a higher education system and its constituent institutions are expected to possess can be derived from the policy-driven goals for that system. Secondly, quantitative performance indicators can be used to refer to both the properties which a system and its constituent institutions in fact possess, and to those which it *ought to* possess. Thirdly, quantitative indicators which refer to properties which a system or institution ought to possess can be termed the benchmarks for that system.

These methodological assumptions can be seen at work in the radar graphics, developed by the NWG to assess the performance of Universities and Technikons. The following two graphs show the norms and averages for the University and the Technikon sectors from the NWG report (Department of Education 2001:14).



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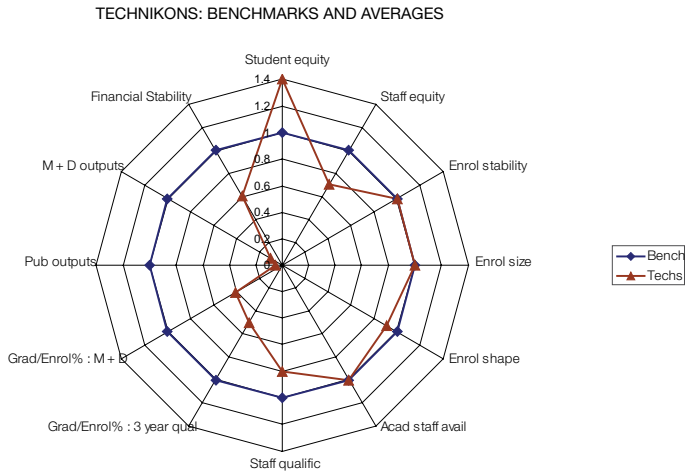

Figure 1: *NWG radar graphs for University and Technikon sectors*

Auditing Against Pre-Determined Objectives

Within the South African context, a recent trend towards auditing of universities according to their pre-determined objectives will result in more attention being paid to performance indicators.

Historically, the auditing and annual reporting of the universities related mainly to their financial statements. Since 2014, however, a performance assessment has been required by the DHET as part of the annual report as stipulated in the *Regulations for Reporting by Public Higher Education Institutions* (Republic of South Africa 2014). The regulations set out the requirements of the DHET with regard to an Annual Performance Plan, a Mid-Year Performance Report, and an Annual Report. Section 7(2) states that "the annual report must include a performance report".

The accompanying *Implementation Manual for Reporting by Public Higher Education Institutions* states that the performance assessment report should indicate the extent to which the strategic goals and objectives of the institution have been achieved and should refer to the "key performance indicators and targets as stated in the Annual Performance Plan" (Republic of South Africa 2014:19).

The requirements for the Annual Performance Plan specify that it should include "SMART" key performance indicators and performance targets for assessing the institution's performance in delivering the desired outcomes of its strategic plan. These should include, but are not limited to, the headcount enrolment, first-time entering enrolment, success rates (including graduate output and throughput rates), and research output (including research output per instructional/research professional staff) (Republic of South Africa 2014:7, Section 5(d)).

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(The definition of "SMART" in the *Regulations* does not clearly relate to the acronym. The acronym is used in various ways in the literature, originally by Doran (1981) for Specific, Measurable, Assignable, Realistic, and Time-related.)

Templates for the Annual Performance Plan (APP) and the Mid-Year Performance Report were sent to institutions by the DHET after a consultation in September 2015. The APP template has six sections: Strategic Overview, Updated Situational Analysis, Legislative Mandates, Key Performance Indicators, Overview of Budgets, Cash Flow and MTEF Estimates, and Institutional Risk Register.

The section on Key Performance Indicators links the indicators to the Ministerial student enrolment planning targets as agreed upon between the Minister of Higher Education & Training and the university's council. The reporting table has four sections: Access, with 12 indicators related to enrolments; Success, with nine indicators related to student success and graduation; Efficiency, with five indicators related to staff; and Research Output, with three indicators related to research publications and research masters and doctoral graduates.

The table provides for a target related to each indicator for the reporting year (Year n), plus actual values for Year n-2 and the institutional target for Year N-1.

Universities would have used the template for the first time in drawing up their 2016 Annual Performance Plan. Reporting against these targets will be required in the Annual Report for 2016 (and subsequent years).

The influence of the Auditor General lies behind the DHET's requirements. The office of the Auditor General was established in its current form in terms of South Africa's 1996 Constitution as a Chapter 9 institution, meant to support and strengthen the country's constitutional democracy (Republic of South Africa 1996).

Reporting against pre-determined objectives is a key element in the auditing regime of the Auditor General, who is responsible for reporting on the finances of all national, provincial and local government administrations. While the universities do not fall within this ambit, the Auditor General is empowered by the Public Audit Act (No. 25 of 2004) to audit at his or her discretion any institution that is authorized to "receive money for a public purpose" (Republic of South Africa 2004).

In a video communication associated with the 2014-2015 audits, the Auditor General says that "nothing stops us from auditing them" (the universities), as they receive public funding; but that the AG respects the preference of the leadership of the institutions for the assignment of the auditing function to private firms. (Auditor General on the role of AGSA in auditing of the universities 2015).

In its own annual report to Parliament for the 2014-2015 year, the AG's office notes that it audited 15 Technical Vocational Education & Training (TVET) colleges for the first time. It goes on to say: "Our intensified engagements with the DHET contributed to the promulgation of new Regulations for Reporting by Public Higher Education Institutions by the Minister in June 2014" and "[w]e are consulted on the appointment and discharge of external auditors

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and we further guide the appointed auditors on the extent of their mandate, the depth of auditing and reporting formats" (Auditor General 2014:41-42).

There can be little doubt that the increasing level of attention from the Office of the Auditor General will result in additional demands on the Institutional Research and related offices within the higher education institutions, particularly with regard to reporting against their pre-determined objectives.

Performance Indicators and Types of Monitoring

As indicated at the beginning of this chapter, there are different ways of viewing performance monitoring and the indicators associated with it. In this section, some of the main methods for monitoring institutional performance are considered, namely time series or trend information, reporting on pre-determined objectives, reporting against benchmarks, using a balanced scorecard approach to reporting, and using lagging or leading indicators.

There are different views in the literature on what constitutes a "performance indicator" (PI). (For purposes of this discussion, "key performance indicators" are taken to be a sub-set of "performance indicators" and are not treated separately.) Performance indicators are generally understood to be measures, usually but not necessarily, quantitative in nature that may track different aspects of an organisation's activities.

In the formulation of Cave (1997:24):

> [W]e define a PI as a measure – usually in quantitative form – of an aspect of the activity of a higher education institution. The measure may be either ordinal or cardinal, absolute or comparative. It thus includes the mechanical applications of formulae (where the latter are imbued with value or interpretative judgements) and can inform, and be derived from, such informal and subjective procedures as peer evaluations or reputational rankings.

PIs are often categorised in different ways. Cave *et al*. (1997:24) refer to a 1986 UK working group (of the Committee of Vice-Chancellors & Principals and the University Grants Committee) that distinguished between input indicators (human and financial resources), process indicators (relating to intensity, or the productivity of resource use), and output indicators (what has been achieved, the products of the institution).

The UK's Jarratt Report of 1985 distinguished between internal indicators (including inputs), external indicators (which would include market-place valuations), and operating indicators (including productivity ratios) (Cave *et al*. 1997:24).

Cullen distinguished between indicators of efficiency (comparing outputs with inputs), effectiveness (whether the objectives of policy have been achieved), and economy (comparing actual with target inputs) (Cave *et al*. 1997:25).

Cuenin distinguishes performance indicators from "simple indicators" and "general indicators", with simple indicators being more or less equivalent to management statistics, and general indicators including opinions, survey findings or general statistics. Cuenin says

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performance indicators should show a difference in one direction or another (Cave *et al*. 1997:22-23).

For some, it is a requirement for an indicator to be a "performance indicator" that it should relate to some target or standard. Pugh, Coates and Adnett (2005:20) state that "Measures of educational inputs and outputs only become PIs when they are linked to monitoring, resourcing or planning mechanisms".

It is, however, Cuenin's notion of "direction" which informs the distinction in this chapter between a broad and a narrow view of performance indicators. The broad interpretation will admit Cuenin's "simple indicators" or management statistics, provided that they show a difference in one direction or another. The minimum requirement for this is that they should reflect data over multiple years.

Within the context of this chapter, then, it is accepted that PIs might relate to inputs, process, outputs (or outcomes); to internal, external or operating factors; or to efficiency, effectiveness, or economy. While it is accepted that PIs might include qualitative indicators that cannot be presented as numbers, the focus here is on quantitative indicators.

There is no shortage of potential performance indicators for higher education. Steyn (2011) of Stellenbosch University provided a list of 172 performance indicators to a meeting of the university's Institutional Planning Forum in 2011. Steyn divided the indicators into the categories of Teaching (80 indicators), Research (17), Public Service or Community Interaction (12), and other indicators (63).

Some of the ways in which PIs may be employed in the monitoring of institutional change are considered below.

Change over Time

One of the criticisms of the NWG report was that its indicators and benchmarks were developed on a "snap-shot" basis, rather than a time series (Bunting & Cloete 2004:71).

The reporting of institutional data on a year-by-year basis is probably the most common way of reporting on performance, in the broad sense of "institutional performance indicators". For example, of 18 graphs on the public website of the Cape Peninsula University of Technology at the time of writing, seven refer to data for a particular year (a snapshot) while 11 reflect changes in the data over a nine or ten-year period. The time series graphs show enrolment patterns (headcount enrolments, and enrolments by group, by graduate status, by major area of study); number of graduates and graduates by major area of study; pass rates by faculty; and staff data (permanent staff headcounts, staff full-time equivalents, permanent staff by employment category, and the highest qualification of permanent academic staff) (Cape Peninsula University of Technology 2016).

Trends in the performance of an institution with regard to chosen measures are immediately apparent from such graphs.

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Reporting against Pre-Determined Objectives

Institutions of higher education will typically set targets or objectives per year, over a multiple number of years. Most institutional strategic plans will be drawn up for a period of five years or more; although they may or may not include detailed targets. In South Africa, the institutions have been submitting enrolment plans of three years or more to the DHET (or its predecessor, the Department of Education) since 1999. The Student Enrolment Plan 2014-2019, which universities were required to submit to the DHET in 2013, includes a range of targets for the six-year period.

The new requirement in South Africa that institutions submit Annual Performance Plans is linked (as explained above) to the insistence of the Auditor General on auditing by pre-determined objectives. The key requirement is that performance targets should be set for the reporting year (year N); but the templates provided by DHET allow for some trend data (actuals for year N-2 and targets for year N-1). There is no reason, however, why institutions should not track their targets and actual numbers over a number of years.

A challenge for institutions that the new reporting regime has introduced is to ensure that their annual targets synchronise with any longer-term plans they may have.

Benchmarking

Talking about "benchmarks" in higher education can be confusing, given the different ways in which the term might be used. In one sense, it can be understood as a measure against which to assess one's own performance. For example, a university might choose to benchmark itself against another university in its area, or another university elsewhere that is considered similar in significant ways.

In another sense, the "benchmark" may be aspirational, synonymous with "target". It might also be used to indicate a minimum level of performance below which the institution would not like to fall. Again, it might be used in a normative sense (as was the case with the NWG report) to indicate a level that an institution *ought* to achieve.

It can be argued that the recent development of international university rankings is an exercise in benchmarking, in the sense of comparing institutional performance internationally in terms of the criteria pre-determined by the different ranking organisations.

Balanced Scorecard

A balanced scorecard typically involves a variety of measures in different areas of university activity that are tracked (from year to year, or within a year), and to which some weighting is attached, according to the perceived importance of the measures.

There are various software packages that can assist higher education institutions in setting up the matrix of weights and measures and reporting on the results. The reporting will often involve some colour-coding or direction indicator to show graphically how the institution is performing against the measures, and overall.

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Lagging and Leading Indicators

The timeframe associated with some of the main performance indicators in higher education presents a challenge for reporting on performance. To report on pass rates requires examinations and reassessments for the year to be completed. To report on throughput rates (understood here as successful completion of qualifications by cohorts of students) might require three or four years to have elapsed, depending on the nature of the qualification and the minimum statutory time provided for the qualification.

These will always be "lagging indicators". They tell an important story, but they do not provide information to a university in time for it to affect the outcome. Lagging indicators are typically output-oriented, easy to measure, but difficult to influence. A need for "leading indicators" (input oriented, more difficult to measure but easier to influence) is prompting universities to engage in real-time and predictive learning analytics (see Chapter 12). Early warning reports, derived from such analytics, provide an opportunity for a university to intervene in time to affect the outcome for a particular year, or a particular cohort of students.

University Reporting on Performance

Two approaches were followed in an attempt to establish how the reporting of universities' Institutional Research offices is responding to the trend towards performance-related reporting in higher education. The one was a desktop review of university websites and the other a survey distributed to the Institutional Research office (or the office responsible for the gathering and dissemination of institutional data) of each university. The results are taken to represent the response of Institutional Research offices although, as indicated below, "Institutional Research" does not necessarily feature in the name of the office concerned. Both exercises were restricted to the 26 public universities in South Africa and two public universities in each of Namibia and Botswana.

Website Review

The purpose of the website review was to establish the degree of institutional performance-related reporting by the selected universities that was readily available to the public. For the purposes of this review, both broader and narrower interpretations of institutional performance indicators were employed, as explained at the beginning of this chapter.

On the broader interpretation, a university was deemed to provide performance indicators if any student or staff data showing trends could be found on the public website. This required the university to provide data for more than the two years that might be included in an annual report. On this criterion, 12 of the 30 universities (40%) provided such information at the time of the review (February 2016).

About a third of the universities (9 out of 30) provided readily accessible performance-related data in the stricter sense of reporting in relation to some pre-determined objectives against which the university measures itself. This was typically in relation to the university's strategic plan or annual performance plan, where these were provided on the public website.

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The Botswana International University of Science and Technology (BIUST) had the most explicitly performance-related and readily accessible page, via "About Us / Institutional Performance Targets". It set out university targets in eight areas of activity for the period 2013-2014, but without recording the university's degree of success in meeting the targets. The page has subsequently been removed.

A wide range was evident in the extent of information provided. Among those institutions providing substantial data, Stellenbosch University stood out as providing a wide range of detailed historical student and staff data in a *Statistical Profile*, a *Facts and Statistics* option, and a series of annual *Fact Books* from 2004 to 2015. A graph in the *Statistical Profile* tracks the number of student enrolments from 1910 to 2015.

In terms of the presentation of the information, most institutions relied on tables (presumably from Excel), while some only provided numbers within a narrative. The University of Stellenbosch *Fact Books* are published in PDF format, containing numerous tables and graphs generated in Excel. Cape Peninsula University of Technology (as mentioned above) has a more graphical approach, providing 18 charts on student and staff data in its *CPUT Facts & Statistics* section.

Most of the information located in the review was accessed via the webpages' "About" or "About Us" links; but other likely areas of the websites, such as "Publications", were also searched. Given the nature of websites, it is possible that more information might be available than the review found. If so, the information would have been fairly well hidden within the site, and should not be regarded as being "readily available". It was, however, partly to address this limitation that the subsequent survey of the universities' Institutional Research units was undertaken, as reported in the next section.

Survey of IR Units

A survey form was sent to the same 30 universities reviewed above, addressed to the office considered most likely to provide management information (or business intelligence) to the university community.

The purpose of the survey, as stated on the form (Bleazard 2016:1), was "to gauge the extent to which Universities and their Institutional Research units are reporting on University performance relative to pre-determined objectives". "Institutional Research" was explained as follows:

> This is understood widely, to include a range of activities directed at empirically describing the spectrum of functions at a University and supporting institutional planning, policy development and decision-making (cf. Saupe, J.L. 1990:1. *The Functions of Institutional Research*). The survey is intended for completion by the office in each University that is tasked with providing management information, or business intelligence, to the University community, whether or not the office has "Institutional Research" in its name.

A total of 17 out of the 30 universities responded, a response rate of 56,7%. Among the South African universities, four out of six Universities of Technology (66,7%) responded;

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three out of six Comprehensive Universities (50%), and eight out of 14 Traditional Universities (57,1%). Two out of the four universities outside of South Africa responded, both from Namibia.

All of the respondent offices confirmed that they were responsible for providing management information data relating to the university to stakeholders. Interestingly, from an Institutional Research perspective, only three of the 17 responding offices (17,6%) have the term "Institutional Research" in the office or unit name. Another 17,6% include the term "Management Information", while 35,3% include "Institutional Planning" in the name. Nevertheless (as noted above) they are taken to represent the function of Institutional Research within the universities.

The survey instrument contains a total of 12 questions, most of which included one or more sub-questions. The questions seek to elicit information on the provision of management information on the university's website, whether public or protected; the provision of performance-related data; the maintenance of a balanced scorecard reporting system; the tracking of university performance in relation to international university ranking systems; benchmarking against other universities; and whether the university conducts any real-time learning analytics or predictive learning analytics (see Chapter 12 for a report of another survey, focusing on the maturity of learning analytics systems in South African universities).

The survey responses largely confirmed the findings of the Website Review reported in the previous section. In all, 41,2% of the respondents indicated that their university provides some management information via the public website and they submitted a link to the appropriate page.

In two instances, universities that were thought on the basis of the Website Review to have no staff or student data on the public site (NMMU and University of Pretoria) do in fact make some management information available to the public, with the University of Pretoria's downloadable *Statistics at a Glance 2014* providing a range of student and staff data. In both cases, however, the information is not obviously available to a visitor to the website as navigation through university departments is required to reach the data.

The survey sought to elicit more detailed information regarding the type of management information provided by the universities. A question asked specifically whether the university provided any performance-related data on its public website, where such data concerned "reporting on institutional performance in relation to pre-determined objectives: some target should have been set, or a benchmark chosen, against which the university measures itself." Only three out of 17 (17,6%) of the respondent institutions reported that they provided such information; but in two instances the site could not be accessed at the web address supplied.

The third respondent, the University of Cape Town, has a report entitled "*Evaluation of the Strategic Plan 2010-2014*" available to the general public (University of Cape Town 2014). The report begins with a summary dashboard in which colour-coded fields indicate the overall nature of progress against 58 approved strategic indicators (e.g. "Positive Progress",

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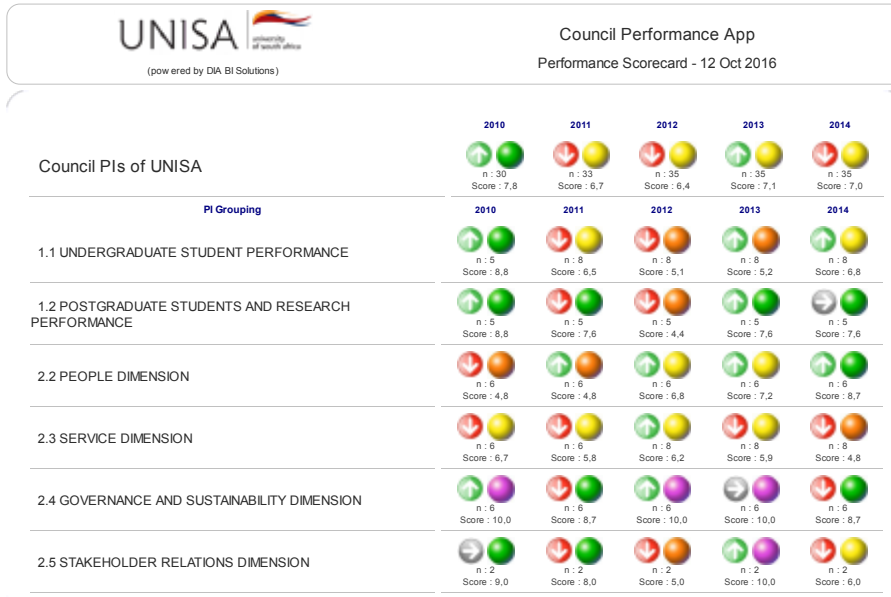
"Mixed", "Deterioration/No Progress", "Not Tracked"). A narrative follows, which includes detailed time-series reports (typically for five years of data) for some of the indicators.

In answer to a question on whether they provide performance-related data on the University's intranet (password-protected or firewall-protected site), 70,6% of respondent institutions reported that they provide such data.

The University of Fort Hare, which provides no management information on its public website, reported that it tracks 83 performance measures internally. They include areas like student enrolments, student success, student satisfaction, research output and activity, new qualifications, residence information, employment of students by the time of graduation, facilities and maintenance, staff development and transformation, and financial sustainability.

UNISA tracks 48 performance indicators in a balanced scorecard at Council level. It tracks performance in the six dimensions of undergraduate student performance; postgraduate student performance; people; service; governance and sustainability; and stakeholder relations. In addition,196 indicators are tracked at portfolio and college level in the eight areas of advisory and assurance services; finance and business enterprises; information and communication technology; institutional development and transformation; operations and facilities; enrolments and administration; research, postgraduate studies, innovation and commercialisation; and teaching, learning, community engagement and student support

An extract from a high-level Council report, provided by the respondent office at UNISA, is shown below:


UNISA

(pow ered by DIA BI Solutions)

Council Performance App

Performance Scorecard - 12 Oct 2016

Council PIs of UNISA	2010	2011	2012	2013	2014
	n : 30 Score : 7,8	n : 33 Score : 6,7	n : 35 Score : 6,4	n : 35 Score : 7,1	n : 35 Score : 7,0
PI Grouping	**2010**	**2011**	**2012**	**2013**	**2014**
1.1 UNDERGRADUATE STUDENT PERFORMANCE	n : 5 Score : 8,8	n : 8 Score : 6,5	n : 8 Score : 5,1	n : 8 Score : 5,2	n : 8 Score : 6,8
1.2 POSTGRADUATE STUDENTS AND RESEARCH PERFORMANCE	n : 5 Score : 8,8	n : 5 Score : 7,6	n : 5 Score : 4,4	n : 5 Score : 7,6	n : 5 Score : 7,6
2.2 PEOPLE DIMENSION	n : 6 Score : 4,8	n : 6 Score : 4,8	n : 6 Score : 6,8	n : 6 Score : 7,2	n : 6 Score : 8,7
2.3 SERVICE DIMENSION	n : 6 Score : 6,7	n : 6 Score : 5,8	n : 8 Score : 6,2	n : 8 Score : 5,9	n : 8 Score : 4,8
2.4 GOVERNANCE AND SUSTAINABILITY DIMENSION	n : 6 Score : 10,0	n : 6 Score : 8,7	n : 6 Score : 10,0	n : 6 Score : 10,0	n : 6 Score : 8,7
2.5 STAKEHOLDER RELATIONS DIMENSION	n : 2 Score : 9,0	n : 2 Score : 8,0	n : 2 Score : 5,0	n : 2 Score : 10,0	n : 2 Score : 6,0

Figure 2: ***Extract from Council Performance Scorecard 2015, University of South Africa***

The overall picture which emerges from the website review and the survey is this: about 40% of the universities provide some performance-related data in the broader sense that

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is readily accessible to the general public via their website; a small proportion (about 12% of the sample) deliberately provides performance-related information to the general public in the stricter sense of reporting against pre-determined objectives; but most universities (almost 71% of the survey respondents) provide performance-related information internally to the university community via their intranet, which is not accessible to the general public.

This picture needs to be tempered, however, by evidence from the website review with regard to the universities' annual reports. Using the website "Search" option where available, 70% of the institutions were found to provide one or more of their annual reports on their public website (although they are not all easily accessible).

Since the publication of the DHET's reporting regulations for South African universities in 2014, it is a requirement that the annual report should contain a performance assessment report, reflecting performance-related information in the narrow sense. The effect of this requirement can be seen in the 2014 annual reports of these universities, as published on their websites. Most of the reports (66,7% of those accessed) have a section that addresses the performance assessment requirement in some way or another, although there is no consistency in the way this is done. Some reports make statements of achievement or non-achievement against broadly stated objectives, while others provide detailed numerical targets with a report of performance against the targets. Some report in detail on university performance in relation to the targets set in their Student Enrolment Plan for 2014-2019.

To illustrate the performance-related reporting by means of annual reports, two examples are given here.

The University of KwaZulu-Natal (2014) provides a table of targets in its 2014 annual report with a colour-coded indication of success in a dashboard-type report. The first set of indicators, relating to enrolments, is shown below. The other indicator sets relate to graduation, research, and meeting the expectations of society.

Table 1: ***Extract from the 2014 Annual Report of the University of KwaZulu-Natal (2014:34)***

REPORT OF THE VICE-CHANCELLOR AND PRINCIPAL

INSTITUTIONAL INDICATORS 2014
Achievement as at 6 March 2015

Colour coding:
Exceeded target
Improvement over previous year, but target not met
Target not met
Source data not final/not available

	Indicator	Comments	2013		2014		2015	2016
			Achieved	Target	Achieved	Target	Target	Target
1.	Enrolment – meet input expectations of the government							
1.1.	Meet the undergraduate target	subsidy earning undergrads per enrolment plan excl.Occ	31 758	31 101	32 683	31 904	32 113	32 523
1.2.	Meet the postgraduate target	subsidy earning postgrads per enrolment plan excl. Occ	26%	25%	26%	25%	26%	26%
1.3.	Meet the percentage PhD to student ratio	based on enrolment plan	5%	3,9%	6%	4,6%	4,6%	4,8%
1.4.	Meet the percentage international students	10% by 2016	7%	7%	6%	8,0%	N/A	10%
1.5.	FTE student to staff ratio	based on enrolment plan	20,4	18,7	21,8	18,9	18,8	18,6

The University of Johannesburg (2014) includes a short "balanced scorecard" report. The first two parts of the six-part scorecard are shown below:

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Table 2: ***Extract from the 2014 Annual Report of the University of Johannesburg (2014:18)***

UJ INSTITUTIONAL SCORECARD 2014						
STRATEGIC GOALS			**Weight**	**Target**	**Outcome**	**Score** (out of 10)
1	**Research and Innovation**		**20%**			**8,73**
	1	Postgraduate output (honours, Masters and Doctorates)		2327	2342	8,2
	2	Postgraduate enrolments (Honours, Masters and Doctorates)		6211	6029	7,56
	3	% permanent and fixed term academic staff with doctorates		37%	43%	10
	4	Accredited research output units (year n-1)		900	897	7,9
	5	Total citations (year n-1)		1410	2387	10
2	**Teaching and Learning**		**20%**			**9,8**
	1	Enrolment profile by CESM category (SET)		31%	31,7%	10
	2	Undergraduate output		8730	9566	10
	3	% First-time entering undergraduate students with APS at least 35		28%	31,8%	10
	4	Employability within 12 months		93%	93,6%	9,2

The majority of South African universities, while not deliberately making performance-related data available to the general public in a readily accessible way on their public website, are providing such information (in different ways) through publication of their annual report. This tendency can be expected to accelerate with the publication of the 2015 annual reports, which had to be submitted to the DHET by 30 June 2016. A greater degree of consistency in the way that performance is reported can be expected as the Universities adopt the reporting templates provided by DHET in 2015.

Outside of South Africa, it appears that the pressure for performance-related reporting is not as high. The two universities in Namibia and one of the two in Botswana surveyed for this chapter make their annual report available on their public website, but none of the three reports for 2014 includes a performance report against pre-determined objectives.

With regard to university rankings, 70,6% of the survey respondents reported that their university tracks its performance in relation to the criteria of one or more international university ranking systems. The most commonly followed are the *Times Higher Education World University Rankings* and the *QS World University Rankings*, at 41,2% of respondents each, followed by the *Academic Ranking of World Universities* (Shanghai) at 35,3%, U-Multirank (29,4%) and Webometrics (23,5%). Some of the respondent universities track more than one system.

Many of the respondents (88,2%) indicated that their university benchmarks itself against other universities.

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National and International Reporting

In this section, some of the main sources of performance reporting in the South African context are discussed.

Department of Higher Education and Training (DHET)

HEMIS (the Higher Education Management Information System administered by the DHET) provides the basis for most analyses of higher education institutional performance in South Africa, whether in the broader or the narrower sense employed in this chapter. HEMIS evolved from the earlier SAPSE (for South African Post-Secondary Education) reporting system (see Chapter 10).

Through HEMIS, the DHET collects data from the universities at the unit record level (i.e. at the level of individual students and individual members of staff). This allows the DHET to do detailed analyses and enables flexibility in the nature of the analyses. In order, however, to protect the personal information of individuals as required by national legislation, the DHET does not make data at unit record level available to third parties, only in an aggregated form.

The DHET makes some aggregated data (e.g. student headcount enrolments, student full-time equivalents, graduates, and staff) available in Excel tables on its website (Department of Higher Education and Training 2016a). The DHET also makes aggregated data from the HEMIS database available to other stakeholders for use in their publications or on their websites; e.g. to the Council on Higher Education (CHE), Centre for Higher Education Trust (CHET), and the Higher Education Data Analyzer (HEDA), as noted below.

In March 2016, the HEMIS Directorate published its first report on throughput rates in South African higher education, in a document with the title, *2000 to 2008 First Time Entering Undergraduate Cohort Studies for Public Higher Education Institutions*. (DHET 2016b). The report enables a comparison of contact and distance education dropouts and throughputs, as well as comparisons by gender and population group.

CHET Studies

CHET, the Centre for Higher Education Transformation (in 2016 renamed to the Centre for Higher Education Trust) has played a leading role in the development of performance indicators for higher education in South Africa and further afield in Africa.

In 2004, Nico Cloete and Ian Bunting of CHET published a book, *Developing Performance Indicators for Higher Education: A South African Case Study* (Bunting & Cloete 2004). The book begins with a discussion of performance indicators and performance measurement from an international perspective and then reports on CHET initiatives within the South African context, from 2000 onwards, and the NWG report of 2001.

In 2010, CHET published a set of 18 performance indicators for the South African system as a whole, followed by an analysis of 20 indicators for each university (Bunting *et al*. 2010). For each indicator, a graph is provided showing the trend from 2000 to 2008, or to 2010 where possible. Seven graphs track changes in student enrolments; three look at student success

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and graduation; five are devoted to staff, mostly academic staff, and research outputs; and five to income and expenditure.

CHET has also led the HERANA initiative (Higher Education Research and Advocacy Network for Africa), which has led to publications that assess the performance of eight flagship universities across eight different African countries, including: *Cross-National Performance Indicators: A case study of eight African universities* (Bunting & Cloete 2012); and *An Empirical Overview of Eight Flagship Universities in Africa: 2001-2011* (Bunting *et al*. 2013). The universities studied were the University of Botswana, the University of Cape Town, the University of Dar es Salaam, Eduardo Mondlane University, the University of Ghana, Makerere University, the University of Mauritius, and the University of Nairobi. In their *Cross-National Performance Indicators* report, Bunting & Cloete (2012:39) argue that "the key principle of performance being relative to goals could be met in a cross-national performance system if the flagship university in each country is identified, if the broad goals built into its mission and vision statements are extracted, and if these are then restated as goals embedded in the academic core of the university".

Bunting and Cloete (2012:19) identify eight "academic core goals", including five input and three output goals, namely strong enrolments in science, engineering and technology (SET), strong postgraduate enrolments, favourable student to academic staff ratios, high proportion of academic staff with doctoral degrees, high levels of research funding, high outputs of graduates in SET fields, high outputs of doctoral graduates and high levels of new knowledge production. A target is related to each goal, which indicates when a university's performance can be considered "strong" or "high". For example, "strong SET enrolments require at least 40% of students to be in SET programmes". The performance of each university is then assessed relative to the goals for each target.

The HERANA studies and related datasets, as well as many other CHET publications, are freely available from the CHET website. The CHET site includes two Open Data resources, one for African and one for South African Higher Education, with a range of performance-related data (Centre for Higher Education Trust 2016a; 2016b).

HEDA Peer Data Sharing

The Higher Education Data Analyzer system (HEDA) is a performance tracking and reporting system for higher education, developed by a Potchefstroom-based software development company IDSC. HEDA includes a range of 18 modules, including enrolment planning, dashboards, cube reports, cohort analyses, viability reporting, a financial allocation model, and a business plan generator. Fifteen South African universities make use of HEDA. Most of them use the dashboard module, running off a data warehouse, as a means of reporting on institutional performance via their intranet.

IDSC (2016) maintains a freely available Peer Data Sharing (PDS) website, which provides aggregated HEMIS data of all South African public universities. Each university client of IDSC is given a PDS dashboard that allows the university to view its own institutional data, at university level or lower levels, in relation to the university level data of the other South African universities.

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Council on Higher Educations Reports

One of the functions of the Council on Higher Education (CHE) is to publish information regarding developments in higher education, including reports on the state of higher education (see Chapter 8).

The Monitoring and Evaluation Directorate of the CHE has been publishing data on higher education in an annual publication, *Vital Stats: Public Higher Education,* since 2012 (for the 2010 year) (Council on Higher Education 2016a). The main source of the data is HEMIS. The scope of its reporting has expanded from year to year and by 2015 it included student throughput data as well as financial and research data. The data is presented in graphical form, with an associated table below each graph. The most recent edition, *Vital Stats 2013*, reflects data from 2008 to 2013. *Vital Stats* provides performance-related data in the broader sense, as it does not attempt to relate the data to targets.

In pursuit of its mandate, the CHE's Advice and Monitoring Directorate publishes periodic reports in its Higher Education Monitor series. *The Higher Education Monitor* No. 8, for instance, examines trends in the sector for the period 2004-2007, which includes the period in which the mergers of South African institutions were implemented. So far thirteen publications in the Higher Education Monitor series are available from the CHE (Council on Higher Education 2016b).

SATN Performance Indicators Project

The association of Universities of Technology (UoT), called the South African Technology Network (SATN), was established in 2006 after the mergers that created this institutional type. Membership of SATN currently includes the six Universities of Technology in South Africa and the Namibia University of Science and Technology (NUST).

As part of a broader initiative to distinguish the role and function of Universities of Technology from the other South African university types, the SATN undertakes an annual review of institutional data, published in a report entitled the *UoT Performance Indicators Profile*.

In the *UoT Performance Indicators Profile 2013* the SATN (South African Technology Network 2015:ii) notes: "Despite some difficulties in gathering data in areas that are not part of the national Higher Education Management Information System (HEMIS), the UoTs are developing useful data in relation to their contribution to national priority areas; science, engineering and technology (SET); research and collaboration; and innovation and entrepreneurship." The profile report provides a range of graphs, typically showing a five-year timeline for the SATN member universities, grouped under the following broad headings: Technology-focused Programmes, Student Success, Staff Profile, Research and Innovation, and Sustainability. Since 2012, there has been a shift in the focus of the profile report to provide a broad picture of the performance of the University of Technology sector, rather than highlighting factors that distinguish it from the other university types. This followed input from the Ministry of Higher Education & Training at a meeting with UoT Vice-Chancellors in May 2012, where the absence of teaching and learning indicators in the earlier reports was noted. The *UoT Performance Indicators Profile 2013* consequently includes the number of graduates, the pass rates, and the throughput rates.

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While the annual *Profile* reports of the Universities of Technology provide performance indicators over time, they do not report against university targets.

Conclusion

The global trend towards performance-related reporting in higher education is evident in Southern Africa. Within South Africa, it can be expected to accelerate as the requirements of the DHET and the Auditor-General for reporting against pre-determined objectives become an accepted part of annual reporting practices.

The Institutional Research offices of many of the universities surveyed are producing management information (or business intelligence) reports relating to institutional performance. Little of this is, however, being shared with the general public via their websites, except where published annual reports include a performance assessment. About 40% of the universities provide some performance-related information in the broad sense, but only 12% of survey respondents deliberately make performance-related data available on the public website, apart from what is contained in their annual reports.

This situation can be expected to change to the extent that more South African universities publish their annual reports on their public websites, as their annual reports must now include a "performance assessment" section.

In the background, on intranets that are not accessible to the general public, there is considerably more reporting on how the universities are performing. Such reporting includes the monitoring of performance in relation to university objectives or targets, benchmarking against other universities, and tracking of university performance in relation to the criteria of international rankings.

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