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NO EASY ROAD - ACCOUNTABILITY IN MODERN EDUCATION FOR PROFESSIONAL SURVEYORS

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"Professional education, as it exists at a particular moment in time, is then the sediment of the former struggles and strategies of occupations for whom the images of success survive from a heroic past..."

[Johnson 1984 p. 25]

"All professions have their own way of justifying laziness. Harvard professors are terribly impressed by the jeweled fragility of their minds. Like the thinnest metal, these are subject terribly to fatigue. More than six hours of teaching a week is fatal - and an impairment of academic freedom. So, at any given moment, the average professor is resting his mind in preparation for the next orgiastic act of insight and revelation."

[J.K. Galbraith 1979 p. 287]

Introduction

In any economy where public expenditure on higher education accounts for a sizeable proportion of Gross Domestic Product (GDP), *equity in spending* and *equality of access* have long been considered to be crucial issues in the political arena. They still are. However, we now find that it is concerns about the *efficiency* of higher education provision, and especially its *quality, form, content* and *relevance*, which are now expressed most stridently. In turn, this has led to demands for more coherent planning and management control systems in higher education generally within which the *accountability* of the institution, the professional school and the individual academic is a *sine qua non*.

Then, in the space of a decade or so, the well-defended vocational walls which have surrounded land information professionals, especially land surveyors, have begun to be breached in many parts of the world. Primarily, this process is due to the advent of new information and positioning systems, including

Land Information Systems (LIS), Geographical Information Systems (GIS) and Global Positioning Systems (GPS) over which surveyors have no particular lien. This has been coupled with other powerful external forces such as professional deregulation. Quite simply, there is a new game, new turf and new players. Things are not what they used to be - nor will they ever return to what they were. Unfortunately, many wish that they would and a laager mentality is still alive and well in the worlds of surveying academe and professional surveying practice alike. Yet, some individuals and institutions have, with not a little delight, welcomed the opportunities which change invariably brings and, moreover, achieved success. This success is due, in no small way, to the vigorous adoption of a variety of innovative measures of modern academic management including the process of proper accountability and the introduction of performance indicators.

There is also the matter of a growing and increasingly vociferous consumer lobby. In a number of countries, including Australia, New Zealand and Great Britain, tertiary students have had to sustain substantial increases in direct charges for their courses. In practice, the alternative cost-recovery mechanisms range across the charging spectrum and include: full-cost fees, supplementary top-up fees for certain courses, repayable loans and inflation-indexed graduate taxes. Yet, whatever the charging mechanism, it would be surprising if the natural querulousness of students regarding their education anyway were not intensified by the forceful expression of dissatisfaction if they consider the education they receive as representing poor value for money.

It would also be surprising if there is not increased pressure from both public-sector and private-sector employers of surveying graduates for greater accountability to be demonstrated by those involved in professional surveying education. Many of these employers have been put through an "economic wringer" by governments set on obtaining efficiency and effectiveness in the national economy. Moreover, to survive in the medium term and long term, they know that they need that essential input which comes from fresh, active, and capable young minds able to respond to the new challenges, not those of twenty years ago.

To put it bluntly, academic accountability is not just a fashionable word. Increasingly, it is a powerful and necessary, albeit emotive, issue for governments, tertiary-education institutions, individual academics, tax-payers and students alike. The reality of the academic environment today is that the introduction of accepted management practices - strategic plans, performance appraisal and business plans to name but three - are all becoming part of the daily routine.

However, a major problem which accompanies the introduction of increased accountability for the tertiary-education sector in Australia lies with the lack of proper provision, within the new performance appraisal process, for financial rewards for individual high-achieving academics. This contrasts markedly with the private sector and, indeed, with some parts of government where performance payments are the norm. Thus, in a sense, the tertiary-education sector has been both squeezed by government and also put through the "economic wringer" as well. Moreover, this has happened at a time in Australia when academic salaries have fallen, in relative terms, well behind teachers and other related professionals. The net, and worrying, result is that many of the best people are leaving universities, while at the same time it is very difficult to attract suitable professionals into the tertiary-education sector.

The purpose of this paper is four-fold. First, we outline what is meant by accountability. Then, we will explore the manner in which accountability fits into the rapidly-changing world of higher-education management. The third objective is to examine the various inter-mingled relationships and responsibilities of the major role-players in professional surveying education. Finally, we consider the need for and introduction of suitable performance indicators to provide an essential underpinning to the academic accountability process.

We offer no apology for using the management practices at the University of Melbourne as an example throughout the paper. Quite simply, it is sensible to comment on that which one knows well. Moreover, in dealing with some issues of potential contention and sensitivity, it seemed more prudent to remain

reasonably "close to home". Naturally, it is recognised that similar processes would be found in other institutions to varying degrees.

Part One - The Process of Accountability

1.1 The Origins of Accountability

In its pure form, accountability invokes a responsibility to communicate and vindicate specific actions:

"In short, accountability, even at its simplest in the relationship between individuals, presupposes agreement both about what constitutes an acceptable performance and about the language of justification to be used by actors in defending their conduct. Furthermore, it implies a definition of the relationship between actors. To talk about accountability is to define who can call for an account, and who owes a duty of explanation."

[Day & Klein 1987 p. 5]

Clearly, a number of important elements emerge immediately: agreement as to acceptable performance; justification and conduct; and, the key relationship in accountability regarding *who* accounts to *whom*. Whilst the private sector, in market-driven mode, may well subsume accountability into a few carefully selected performance measures, for example, proven asset value or profitability, those in the public sector encounter more difficulty in this task. In practice, they find it necessary and desirable to formalise this responsibility as to: the substance and format of the accountability statement; its sponsors and recipients; the time and frequency of the accountability statement; the scene of reporting; and, not the least important, the actual and likely consequences which flow from the accountability report. It is not a simple matter.

Why then has accountability become a vogue term in evaluating public-sector expenditure? The reasons are quite straightforward mostly revolving around an underlying hypothesis that public sector management can be and should be improved in a number of ways. In this context, accountability then encompasses several other concepts now well-beloved of modern governments namely; *economy*, *efficiency* and *effectiveness*, where,

"Economy is usually thought of as the obtaining of the appropriate quality and quantity of goods and services at the appropriate times and at the best prices..."

"Efficiency is achieving the best possible productive use of goods, people and money and its assessment leads to an examination of performance measures and similar productivity indicators."

"Effectiveness is the extent to which programs are actually accomplishing what they were intended to."

[CCAF 1985 p. 12]

Two further goals of accountability, namely *excellence* and *enterprise*, are also seen as desirable by many of those persons concerned with public-sector management. All of these concepts enjoy further exposure later in this paper in the context of higher education for professional surveyors.

In the last couple of years many of the accountability criteria have been incorporated into the concept of Total Quality Management (TQM) which, in simple terms, is "doing things right the first time". TQM is being applied in both the government and private surveying sectors. Organisations are preparing TQM procedures and guide-lines for many of their tasks. Obviously tertiary-education institutions will increasingly become a part of the application of TQM to the whole surveying profession. However, its

application in education and research will not be easy.

Within the tertiary education sector, the over-riding criterion for accountability is academic excellence. In extremis, it may be necessary to part-compromise economy, efficiency, effectiveness in the academic sector to some degree. However, for any institution fully conscious of its future, academic excellence is simply not negotiable.

1.2 The Dimensions of Accountability

Smith [1980] usefully identified a number of different types of accountability which can be aggregated into distinct groups:

(1) Political	(2) Managerial	(3) Legal
Accountability	Accountability	Accountability
Constitutional	Commercial	Judicial
Decentralized	Economic	Quasi-Judicial
Consultative	Professional	Procedural

In general, *political* accountability is mainly concerned with those persons with delegated authority who, *ipso facto*, then become answerable for their actions. Typical examples might include a Cabinet Minister's responsibility to Parliament or an MP's duty to constituents. In addition, there is the political accountability which is frequently delegated to officials who are *appointed*, as opposed to *elected*, as part of the due process of government. In all of these cases, proper political accountability requires that the individual's actions, justifications and explanations are subjected to judgements of worth by the appropriate societal group. Sometimes, this awaits an election!

Managerial accountability varies widely in function, format and scope between the private sector, the publicly-owned organisations, e.g. public corporations, and the public non-market sector such as a fire service or, perhaps, a charitable trust. Commercial accountability for owners or managers in the private sector can lie simply in the so-called "bottom line" of profit or loss provided that there has been adherence to the formalised rules of standard accounting and auditing. Similarly, where public organisations are increasingly funded through "user-pays" processes rather than state budgets, it is now presumed that executives will make quasi-commercial decisions which reflect market forces, albeit supposedly with a social conscience!

As a sub-set of managerial accountability, *economic* accountability is mainly concerned with the "proper" use of scarce resources. In practice, this often tends to be the implementation of managerial practices purposefully aimed at achieving the goals of economy and efficiency described above. The usual mechanisms for obtaining improved economic accountability are: management accounting; planning and control ; and, an evaluation of management performance. Managers of true public-sector programmes are likely to have the additional element of effectiveness to account for as well. That is, the need to show that the inherent objectives of policy and programme alike have actually been achieved.

The activities of *professionals* carry with them a rather different set of accountability obligations. By their very nature, practicing professionals are required to show a "duty of care" of a far higher level than that expected of other occupations. This is not surprising since clients and professionals actually enter into an "agency" relationship whereby the clients trustingly place themselves and their interests in the professional's hands.

In addition, governments often hand over significant control regarding professionals' conduct to properly constituted entities, e.g professional institutes or appointed boards. In this way, many professional groups acquire a considerable degree of self-regulatory power and, with it, a responsibility to ensure that specified accountability requirements concerning professional services are met both individually and

collectively. However, this sometimes means that individual professionals are, in fact, answerable (accountable) only to their professional peers. In turn, this can mean that the profession defines the composition of *legitimate professional activity*, *adequate performance* and *accountability* to suit their own collective interests.

There is also a welter of *legal accountabilities* which arise directly out of statute law as well as the actual operation of the judicial process. Thus, it is seen as necessary that the decisions and overall performance of those who are legally responsible is monitored to ensure that: actions are not *ultra vires*; maladministration is detected; and, individuals have some recourse to appeal and review, for example, through the freely-available offices of an ombudsman.

Accountability in the tertiary-education sector and in particular with regard to a university department, can be applied in four key areas:

- provision of education programmes at the undergraduate, graduate and continuing education levels
- research and development
- community involvement which includes involvement in societies and professional institutions, and specialist consulting
- administration at the departmental, faculty and university levels

This brief excursion into the taxonomy of accountability serves mainly to remind us that, like many other topical terms and phrases, accountability is actually quite multi-dimensional as to its substance and form. Moreover, as we can now discern, accountability is likely to possess both *quantitative* and *qualitative* elements which wax and wane according to the type of accountability which pertains to a particular situation. In this context, the choice of proper, appropriate and sustainable techniques of measuring accountability will be of crucial importance. But, as a recent commentary on higher education has it:

"It is not enough for institutions to have explicit quality assurance procedures in place; they should also be able to demonstrate proven quality performance, in the academic calibre of their courses and the effectiveness of their teaching."

[The Times 1990 p. 44]

In other words, the implementation and monitoring of accountability measures must follow their adoption.

Part Two - Accountability in Higher Education

In this part of the paper, we reflect on salient aspects of the forces which have generated change in academic accountability before identifying three separate levels of agency relationship. Each of these relationships is then set against the "checklist" of accountabilities discussed earlier.

2.1 The Doctrine of Academic Efficiency

In the past decade, many governments have come to hold a steadfast belief that a transformation of the provision of higher education generally is long overdue. Many have also displayed an energetic commitment to achieving such a transformation. This has been an interesting educational development of the 1980's and where better to begin than with a glimpse of Thatcherite Britain as delicately unveiled by Paxman [1990]:

"The common-rooms of Britain's universities were once the repository for the values of the Establishment. The world of the high table might have been remote, privileged, bitchy but it nurtured that certitude which underpinned the higher professional classes. The beliefs that were acquired at the universities, notably at Oxford and Cambridge, had a resonance way beyond the small elite who emerged clutching their degrees before sliding, apparently

effortlessly, into public service, the professions, or politics..."

"The core of the Great and the Good came from academia, trundling down on the train from their regius professorships to serve on one royal commission or another, to give a minister informal policy advice, or just to mingle in the clubs..."

"Yet little of the intellectual drive of the 1980's came from the ancient seats of learning. Mrs Thatcher dealt with the dons' collective wisdom in the most effective way possible. She ignored it."

[Paxman 1990]

Whilst she may have spurned a sizeable chunk of the academic community, Mrs Thatcher nevertheless has found sufficient soulmates in the new-right economic policies of the Chicago School as well as the writings of British economists from the Adam Smith Institute and the Institute of Economic Affairs (both right-wing think-tanks). As to tertiary education, the Thatcher Government's desire for "more efficient" academic institutions was manifested quite early in the form of specific vocational studies, for example engineering [Finniston 1980] and earth sciences [Oxburgh 1987], and wholesale efficiency studies, such as the Jarratt Report [1985] and various ensuing reports [Clayton 1987; DES 1987] and some repostes [Reynolds Report 1986]. Both Australia [Dawkins 1987, 1988], and New Zealand have followed similar paths with Antipodean variants on the theme.

It is always very difficult to "get it all right" in any major reform process and this is undoubtedly the case with all the present academic-sector reforms. Certainly, they have placed greater emphasis on accountability and, in general, this has had the effect of enhanced performance. However, in the case of Australia, and presumably elsewhere, there have also been some negative aspects. For Australian tertiary education these include the push for forced amalgamations of institutions and an increase in the centralisation of power. Frankly, it is difficult to see the justification for certain reform measures other than political expediency. Elsewhere, in Britain, it seems that certain aspects of the Jarratt Report have had considerable influence and so acted as a watershed in the quest for efficiency and effectiveness for many universities. In particular, the committee noted that:

"We believe that universities now have a crucial task to set up the necessary structures and procedures to maximise the effectiveness of the use of their limited resources; and these procedures will have to allow substantial changes in the deployment of resources within individual universities. Only in this way will they be able to assure themselves, the Government and the society of which the universities are part, that the money they are given to pursue their educational roles is spent effectively."

[Jarratt Report 1985 p. 16]

In assessing the maximisation of effectiveness by British universities, the Jarratt Committee sought answers to seven basic questions:

"(i) How much strategic and long term planning takes place in universities?

(ii) On what criteria are resources allocated?

(iii) By what mechanisms are resources allocated?

(iv) What is the quality and extent of management information?

(v) Who, below Council, is responsible for the allocation process?

(vi) What is the budgetary control mechanism?

(viii) What is the process of accountability?"

[Jarratt Report 1985 p. 17]

This is not the place to review the Committee's findings in detail - suffice to say that the Committee considered that the greatest scope for performance improvement lay primarily in the areas of better planning, resource allocation and accountability (monitoring).

It is worth noting that today, in institutions such as The University of Melbourne within the Faculty of Engineering, the introduction of good management practices allows a very positive response to the above questions. For example:

- i. strategic and long term planning takes place on an annual basis with departmental plans being incorporated into faculty plans which then become part of the university's overall strategic plan.
- ii. the criteria for allocating resources is based solely on performance. Funding for teaching and the running of faculties and departments is based on a \$ amount for each equivalent full time student. Research and major equipment grants are allocated based on research proposals.
- iii. in the past, government funding has been allocated to faculties and then to departments on an ad hoc basis or, at best, by formulae based on student numbers and, sometimes, teaching commitments. This funding model did not recognise the importance of academic excellence in research and development. Today, in the Faculty of Engineering about 20% of government funds are allocated based on research performance. This amount is allocated by formula based on publications, numbers of graduate students and monies brought into a department. It must be recognised that these are not extra funds but are required for the daily running of a department and for staff salaries. Simply if a department is not performing in research and development, it will eventually cease to operate at all.
- iv. each year, vast amounts of statistics and management information are prepared and collated by the university and sent to central government. Ironically central government has not learnt to use the majority of this data.
- v. at The University of Melbourne, funds are allocated to the faculties which then distribute them to departments. Basically, departments receive a "one line" budget to be allocated to salaries, operating funds, equipment, part-time teaching etc as determined by the department.
- vi. the budgetary control mechanisms are based in the departments. All transactions are reported to departments from a central accounts division. The responsibility for managing and balancing the budget rests with the department.
- vii. all academic staff are appraised annually in the university. The head of department appraises members of the department, the dean appraises the head, the Vice Chancellor appraises the dean and a committee of Council appraises the Vice Chancellor.

In practice, the activities and reports of the various government and other enquiries has engendered a new managerial style and thinking in many universities. Notwithstanding the fact that universities do differ in a number of respects from commercial enterprises, increased emphasis is now being placed by "new-breed" university administrators on various management philosophies, tools and techniques adopted from the corporate world - efficiency is the catch-cry. In particular, one finds many more university Vice-Chancellors advocating the concept of corporate excellence along the lines of Peters and Waterman [1982] and Peters and Austin [1985]. The reason is simple. Governments have sought to apply various devised non-market mechanisms to allocate resources in the face of competing demands from tertiary institutions. Hence institutions do have to compete more vigorously and actively, not only for students but also for research funds. This has led inexorably to inter- and intra-institutional discrimination for funding broadly based upon teaching ability, research excellence and various other axes of performance. In brief, this approach proposes that higher education is improved by throwing competition, instead of money, at it. Over the last few years the Federal Government in Australia withdrew automatic research funding to many universities and placed these funds in open competition with all tertiary institutions. This change in approach took some time for academic institutions like The University of Melbourne to restructure their

strategy to research funding.

As an aside, changed attitudes in academe elsewhere also appear to have led to a rather different type of job description for professorial positions than formerly might have been the case. For example, a recent advertisement for a professorship in surveying sought:

"... a highly qualified scholar with dynamic leadership qualities and considerable professional experience who will advance the teaching and research programmes within the Department..."

as well as a person who:

"Through wide and appropriate contacts with the surveying profession, he or she will be sensitive to future developments in the surveying field enabling the Department to react accordingly. Particular issues include the recognition that students will be entering the University in the near future with more varied cultural backgrounds than in the past; and that financial contributions from the private sector will be increasingly demanded for the expansion of teaching and research facilities."

[University of Cape Town 1990]

Without suggesting that previous, or existing, incumbents of such positions did not possess such management qualities, the emphasis placed here on the wider-ranging skills of fund-raising, innovation, expansion, visibility and human resource management would probably not have been expressed so overtly in the past.

Today, however, these criteria are essential. For example the Faculty of Engineering at The University of Melbourne raises approximately 40% of its annual budget from external sources, primarily for research and development projects and consultancies.

In addition to the pursuit of excellence, a quest for *enterprise* has also become a watchword in modern academe. This has become particularly evident, not only in public-sector research where scarce funds are now often open to competitive bidding, but also in the opening of a new approach to dealing with the private sector. Joint ventures, staff-exchanges and consultancy services typify the changed attitudes of sapient university departments in moving towards an enterprise way of looking at things. In these and many other ways, cross-fertilisation between the academic world and the private sector is occurring more frequently; to the benefit of both. However, academic excellence in the tertiary education sector is still the over-riding criterion of accountability.

2.2 Dimensions of Academic Accountability

In getting to grips with accountability in professional surveying education, we need to break down the comprehensive approach used thusfar into a series of identifiable duties, responsibilities, linkages and relationships. That is, in the context of the dynamic system which comprises professional surveying education, to tease out the relationships which matter here - those which carry accountabilities which are genuine, important and unambiguous.

To achieve this, we have to undertake this task at three separate levels. First, we must consider the macro-level relationship involving the state, the surveying profession and the academic institution. Then, there is the second-tier linkage between the academic institution, the profession and the professional school. Finally, there is a need to consider, at the micro-level, how the "pit-face" participants in the educational process actually exercise their responsibilities. Here we will find a complicated inter-personal relationship between the student, the career academic and the chosen individual who is actually held responsible for the professional school, usually a professor and/or chairman of the department.

In the sub-sections which follow, we first set out the purpose, functions and duties of various bodies, institutions and individuals before applying the political, managerial and legal accountability concepts outlined earlier.

2.2.1 The State, the Surveying Profession and the Academic Institution.

As with most professionals, probably the most obvious mode of responsibility with which the surveying profession is familiar would be the one-to-one accountability of surveyor to client, whether individual client or corporate client. For a variety of mostly sensible reasons, clients delegate decision-making to the professional surveyor and thereby entrust the practitioner with the making of decisions on their behalf and in their interests. Thus, the important client-professional agency relationship is created whereby in ethics and in law, professional surveyors are accountable to the client for the surveying work which they perform.

In certain circumstances, which are quite difficult to codify across the various professional groups, governments have, at various times, rejected consumer demand as the sole determinant for the supply of specialized services. That is, the maxim of *caveat emptor* is viewed as inappropriate. When this happens, a trade-off usually occurs whereby the state permits the occupational group providing the service to enjoy a degree of protection in return for their activities being governed by potentially restrictive regulatory legislation. As the Merrison Report into regulating the medical profession observed, there is:

"... a contract between the public and the profession, by which the public go to the profession for medical treatment because the profession has made sure it will provide satisfactory treatment. Such a contract has the characteristic of all freely made contracts - mutual advantage." [Merrison Report 1975 p. 3]

Then, working on the premise that "poachers make the best gamekeepers", governments have tended to use suitable custom-made legislation to create regulatory structures, such as a Survey Board, where all or most of the members are experienced professional surveyors from the private, academic and public sectors. Typical functions would include: setting appropriate standards; maintaining a register of practicing professional surveyors; implementing disciplinary procedures when inadequate surveys are performed; and, establishing education and training standards for surveyors prior to registration. More recently, many of these regulatory bodies have sought to better reflect the "public interest" facet by appointing an eminent lay-person as a full member.

Whilst in the past, Survey Boards (or their equivalents) may have set their own professional examinations to monitor entry, they have invariably eschewed much of this responsibility to the academic institutions, and are increasingly doing so. Nevertheless, they tend to supplement the formal courses, say an undergraduate degree in surveying, with requirements for acceptable post-graduate experience and, perhaps, the submission of suitable project work and a professional interview before registration occurs. It is also worth remembering that one of the key facets in acquiring professional status itself is to have a formal course at an advanced level, preferably at a university, for the prestige which that conveys.

Three other important points need to be made here. The first lies with the blunt fact that many modern governments, and their economic advisers, are far less convinced about the need to regulate professions in the public interest than previously. Indeed, Department of Trade investigations aimed at the deregulation of professional activities actually represents one of the few growth areas of government in New Zealand! The second point is even more relevant here. That is, the principal purpose of a Survey Board is to act in the public interest - it is quite definitely not its function to look after the interests of the surveying profession at large. That task remains the role of the professional organisation usually manifested in the form of an Institution of Surveyors. (The differences in the role and responsibilities of the two entities are fully explored in Hoogsteden, 1984) Finally, there is the important matter as to which services are actually regulated. In practice, it has generally been the part played by cadastral surveyors in the land titling and registration processes which has enjoyed protection through regulation. Regulation for and

registration of topographic, geodetic or engineering surveyors is not usual although the Republic of South Africa provides at least one notable exception. Even though cadastral activities are still the major activity of the surveying profession, the influence of this segment is reducing and with it we will possibly find a reduction in the influence of Survey Boards.

With regard to their influence on educational programs, Survey Boards are not pro-active with regard to accrediting surveying programs. In Australia, we are not aware of any case where a Survey Board has visited, reviewed and accredited an academic surveying program on a regular basis as is done with most other professional courses, albeit surveying programs usually submit major course changes to their respective Survey Board for approval (which is usually forthcoming).

In summary, we have a situation where individual professional surveyors are accountable to their individual clients and, over and above that, to a legislatively-created controlling authority (Survey Board) and a professional body (Survey Institute) which are responsible for seeing that the collectivity of individual practitioners perform appropriately, albeit the Survey Board is really only responsible for professional activities associated with the operation of the cadastral system.

The main *political* accountability in this three-way relationship of state-profession-academic institution, vis-a-vis professional surveying education, would seem to lie implicitly, and now explicitly, in government deregulation of surveying as part of "freeing up" the economy and ensuring that "market forces should prevail". There is also an element of political accountability regarding higher education generally. A Minister of Education is invariably held responsible for the fate and fortunes of the nation as regards ensuring an adequate supply of suitably skilled people, including professional surveyors, into the economy.

As to *managerial* accountability, the requirement now placed on academic institutions by government to become more efficient has been dealt with earlier. The main thrust of accountability at this level would appear to be *legal*. The Survey Board invariably has a responsibility, which is included in specific surveying legislation, to account to government, and thereby the public, that the surveying graduates are properly and adequately educated to undertake primarily cadastral activities.

2.2.2 The Academic Institution, the Surveying Profession and the Professional School.

As we move from consideration of those matters which involve the state, the level of political and legal accountability appear to decline somewhat. Certainly, political activity itself exists although it too tends to be more parochial in nature occurring within, as much as between, institutional groupings.

Indeed, rather than strengthening the degree of *political accountability* for higher education, politicians themselves have often seemed far more inclined to urge the devolution of greater responsibility (and accountability) downwards to the consumers of higher education. Essentially, many appear to argue that choice, and with it a plethora of accountabilities, will be restored by the use of methods such as student vouchers; a solution long advocated by economists such as Peacock and Wiseman [1970] and Maynard [1975] in the series of Hobart Papers. But, as anyone who has spent time enrolling students will attest, the average student has an abysmal level of knowledge about courses, let alone the ability to discern and select, in a relative sense, good from bad until quite late in an undergraduate career. However, in the Australian context, the Federal Government has increasingly centralised power with regard to research and teaching priorities while at the same time requiring increasing amounts of data on the operation of universities. In this context, while central government is increasingly requiring greater accountability from universities, it is also increasingly taking away much of their traditional independence.

As to managerial accountability, there is an obvious need for a two-way accountability stream between a professional surveying school and the surveying profession and industry at large. It makes sound management sense for the course content as taught and the practical training which is required before and after graduation to complement one another. At present the surveying profession in Australia has no

formal regular accreditation process of its tertiary surveying programs; this is a fundamental weakness of our profession. This is at variance with virtually all other professions. It is an area which the profession will have to address as the Survey Boards increasingly lose their authority and the profession moves to greater accountability and adopts such management practices as TQM.

There is another useful area of economic accountability - investment in expensive capital equipment. It seems eminently sensible to ensure that such purchases by a surveying department are matched to those in the professional world. Indeed, substantial mutual advantage can be gained through joint-venture purchasing and out-of-term use of costly equipment by the surveying industry. Fortunately a number of tertiary surveying programs do make all their equipment available to the industry. Certainly equipment rental raises significant funds in the Department of Surveying and Land Information at The University of Melbourne.

2.2.3 The Student, the Career Academic and the Head of Department.

As to the shape and form of accountabilities at this level, legal accountabilities now often occur as a result of contractual arrangements; usually between individual staff members and the tertiary-education institution. (Those readers who do not follow academic affairs very closely might be surprised to hear that academic tenure is being replaced increasingly by individual negotiated contracts.) Even so-called "tenured staff" are under a form of contract which allows each party to give the other six months notice. However the termination of an academic staff member in such a manner would require very good justification. The three or five year contracts which are becoming increasingly common, have tended to shy away from very specific performance statements. The reasons for this will become clearer a little later. Nevertheless, the very existence of contracts brings with it an accountability requirement which, in many institutions of higher education, is taking some form of Management by Objectives (MBO). In effect, the real-life performance of these contracts is likely to be monitored in a hierarchical procedure: Lecturer to Head of Department, Head of Department to Dean and so on. Of interest, a recent award for academics in Australia included an agreement to include staff appraisal as a normal process in academic administration.

Academic lecturers clearly have a *professional* duty towards their students. However, and this is probably contrary to the perception of many survey academics, this duty encompasses that of a professional *educator* and not as a professional *surveyor*. In theory at least, a professional academic should have a period of initial training as a lecturer followed by a stage comprising supervised lecture-room experience in order to enable them to become competent lecturers. In practice, this seldom happens. But what we actually find emerging here is an accountability which we chose not to reveal earlier - *moral* accountability. In schools, moral accountability is an important issue:

"Moral accountability is of special importance in education because it pervades the teacher-pupil relationship. Leaving aside the safety legislation and common law, a teacher is answerable to pupils and parents only in moral terms. In a similar manner a head is morally accountable to his teachers..."

[Becher et al 1981 p. 21]

We would submit that moral accountability in a professional surveying department should be no different. It is the duty of lecturer and departmental head alike to ensure that, along with economy and effectiveness, excellence in lecturing is provided. But, duty is like honesty and integrity - it's a hard word and, as we will now see, excellence in teaching and excellence in research do not always sit easily together.

Part Three - Performance Indicators in Professional Surveying Education

3.1 What are Performance Indicators?

By now it should be apparent that, if accountability in professional surveying education is to be meaningful, an accompanying process of performance measurement is essential. The introduction of suitable *performance indicators* (PI's) is a logical progression where a performance indicator constitutes:

"... an authoritative measure - usually in quantitative form - of an attribute of the activity of a higher education institution. The measure may be ordinal or cardinal, absolute or comparative. It thus includes both the mechanical applications of formulae (where the latter are imbued with value or interpretative judgements) and such informal and subjective procedures as peer assessment or reputational rankings."

[Cave et al 1988 p. 20]

It should be noted that the development and sensible implementation of performance indicators in higher education is a large and specialist field in its own right. Interested readers seeking comprehensive coverage should consult texts such as: Johnes and Taylor [1990] or Cave et al [1988] as well as the "house" journals which include the *International Journal of Institutional Management in Higher Education and Research in Higher Education*.

The literature on performance indicators generally distinguishes between the themes of *economy* (avoiding undue expenditure), *efficiency* (minimisation of unit-costs) and effectiveness (achieving prescribed goals). In a parallel approach, the Jarratt Committee [1985], having observed that there was little formal accountability for resource use in British universities, proceeded to identify internal, external and operating indicators. *Internal* indicators include variables which reflect either inputs into the institution (market share of courses; amount of research funds attracted) or valuations internal to the institution (quality of teaching; attraction and success rate of graduate students). *External* indicators include the assessment of an institution in the wider marketplace. For instance: the acceptability of graduate and post-graduate students in employment; publications by staff and citations thereof; and membership, prizes and medals of learned societies are all seen as sensible external performance indicators. Finally, there are *Operating Performance Indicators* which might comprise comparative measures of unit costs, staff/student ratios, staff workloads or class sizes.

Following this approach, and setting higher educational issues against a more demanding economic and social backdrop, it is not unreasonable to perceive higher education as a form of production process. (Although the furore amongst academics at University of California at Berkeley which greeted Clark Kerr's [1963] (in)famous analogy of the *multiversity* with a business enterprise should make one a little wary!) Nevertheless, the process of higher education does transform *inputs* of time (staff and student) and materials (buildings, services and equipment) into *outputs* of incremental knowledge whether in the form of better-educated students or research advances or both.

However, the core problem which remains is how best to describe and measure the output. Here the listing of some performance indicators and their characteristics prepared by Cave *et al* [1988] and reproduced as Tables 1 and 2 is helpful. As can be seen, a number of measures are available each of which has its strengths and weaknesses, costs and benefits. Yet, it provides a useful checklist as to the variety and complexity of measures which academic administrators may choose to adopt. Given the theme of this paper, and for reasons of space, we have elected to highlight a few selected issues concerning performance indicators in teaching and research which are particularly germane to accountability in professional surveying education and those who provide it.

While the discussion is concerned primarily with performance indicators related to teaching and research, the other areas of community interaction and administration should not be overlooked. With regard to community interaction, involvement can be measured by the participation in professional and learned

societies, specialist consulting, advice to governments, membership of committees and commissions etc. Involvement in university management can be measured by chairmanship or membership of departmental, faculty and university committees, by election to positions within the university, by undertaking administrative tasks within the department or faculty, and by undertaking administrative roles such as head or deputy head of a department.

It should not be assumed that academics have not been subject to performance appraisal in the past, it is just that the process is being introduced on a more regular basis. Academics have been and will always be subject to performance appraisal. In universities, promotion is based purely on academic performance in teaching, research, community relations and administration. All government funded research by grants from such bodies as the Australian Research Committee are based on detailed research proposals and extensive peer review. Such grants have about a 35% or less chance of success. For many academics this peer review process is an annual event. All requests for a Special Studies Programme (SSP, formerly Sabbatical Leave) also require an extensive proposal which is reported on at the conclusion of the program. In addition all major equipment grants require substantial proposals which are peer reviewed. In simple terms, the academic environment is based around performance in academic excellence, which is as it should be.

3.2 The Reality of Performance Measures in Teaching

In this discussion, we shy away from the detail of creating performance measures in professional surveying teaching *per se*. Quite simply and properly, this is perceived to be the world of the experts in higher education. Similarly, we are not involved here with the structure and detail of the exact constitution of effective teaching in higher education although those interested might like to consult the sound text by Brown and Atkins [1988]. This paper attempts to look at the practical application of performance appraisal in the tertiary education sector for surveying.

Most universities have a department or service group dedicated especially to higher education teaching. Invariably, when requested, they are only too pleased to assist in advising on teaching improvement whether across a department or for individual cases. Not using this available, and free or minimal-cost, service approaches the criminal given the long-term implications of inadequate or mis-directed teaching in a rapidly changing world of professional surveying.

It is a fact of life that assessing true teaching performance, as opposed to *delivery style, communication skill, ability to explain, creation of rapport*, and so on, is very difficult. In other words, even if one does measure the apparent overall teaching ability of the academic lecturer, perhaps by student or peer review, this is at best a surrogate for the actual real-world value of the final product - a graduate surveyor going into a professional career. This poses a real dilemma and, unfortunately, has led to many professional surveying schools taking less account of teaching performance than they should. An important point here, however, is that whilst excellence in teaching may not be shown easily to contribute directly to enhanced added-value to society, logic tells us that it can do little harm! It seems a reasonable conclusion that incompetent, irrelevant teaching carries with it a real cost for the graduate and for society. The political impact of that risk should not be underestimated. For example, Sir Tim Bell (knighted on 21st December 1990), one of Mrs. Thatcher's favourite media advisers, was recently quoted in British national press as remarking that:

"The universities sidelined themselves with a totally archaic way of working. They spend a lot of time teaching useless subjects. They operate a ridiculous, old-fashioned elitist society, which still has that old British empire thing of 'it's better to get pi...d (our deletion) than learn anything.' It's all potty."

[Bell 1990]

Hopefully such a situation does not apply to the teaching of surveying at a tertiary institution!

Turning to another measure. In practice and certainly in some Australian states, performance measures based on entry qualifications, or High School performance based on a score, are used to rank surveying departments. They are applied longitudinally within institutions in order to assess "improved performance". Cross-sectional comparisons between competing institutions or different states are sometimes used but do not appear to be the norm. In any case, rather like degree results or unit-cost per student, these still do not appear to be completely genuine measures of the actual teaching performance itself. However, if a course is not worthwhile or is performing badly, the market place will sort it out. Simply it will not attract students and the entry level will fall.

Whilst value-added approaches are being developed and refined [See Astin 1982; McClain 1986], their very nature of being data-intensive, long-term and involving expensive procedures causes one to doubt that their widespread adoption is imminent. However, it could well be in the best long-term interests of university surveying departments to attempt to monitor the progress of their graduates in some detail, either by following a cohort through time or by regular cross-sectional surveys. Of course, there will be confounding variables, such as a career change or cyclic economic activity, but the derived information would still be worthwhile.

3.3. The Meaning and Myth of Research Performance

The selection of research performance indicators provided by Cave et al in Tables 1 and 2 is quite comprehensive ranging from input criteria such as research student numbers and research funding to the "classical" output measure of numbers of publications in journals and, of course, citations thereof.

The emphasis placed on publications in refereed journals or invited papers at international conferences is often questioned as a reliable performance indicator for research. Certainly a key proviso must lie with the quality as well as the quantity and the pejorative "publish or perish" syndrome has done little to assist in this. Publish or perish can, and has led to: academics fragmenting their research ; the publication of similar articles ; proliferation of new journals (which use up scarce library resources); citation circles (where groups of individuals agree to cite others as well as themselves); multiple co-authorship and so on.

All this begs the question about peer review and panels of referees who, advocates of research performance would argue, do act vigorously to prevent such abuse. Of course they do but they are not infallible. They are often pressed for time to perform an extremely onerous task which is undertaken out of love or, in some cases, for the prestige which it brings to their department and/or themselves.

Let us be clear, our intention is not to undermine the process of publication as a research performance indicator. Rather it is to emphasize that measuring the quantity of publication does have its frailties. Even where assessment of the quality of publication is undertaken as an alternative or accompanying mechanism, this too has its drawbacks. It is not simple and it takes time. Yet, to maintain long-term credibility there is no alternative to the pursuit of excellence in research as in teaching.

On the other hand from our experience there is most probably no better indicator of academic performance than quality publications. Research which has not been published simply does not exist! The publishing process requires academics to place their academic standing before their peers, both to get an article published and once it is published; this is a very sobering experience. Certainly a few low-quality articles get published in academic journals but the community is not fooled. If an academic is producing poor quality research it is very difficult for it to be hidden. In addition, the process of writing an academic journal article is a disciplined, demanding and rigorous process. It requires the author(s) to express themselves clearly and concisely. They have to get it right or they will be quickly criticised. The other great advantage of publications as a performance indicator is that it is relatively easy to monitor and assess, as distinct from the assessment of teaching performance.

Some other relatively reliable and easy to use research performance indicators are numbers of graduate

students, research grants received and research dollars attracted.

If installing performance measures on research places great emphasis on published work, whilst teaching performance is put in the "too-hard basket", then an imbalance between the two can occur. Naturally, we are not arguing that research proficiency and teaching excellence are mutually exclusive for there is enough evidence around to disprove such a proposition. Indeed, the claim is often heard that one cannot be a good teacher without being a good researcher and, in general, our experience supports this premise. However, there is also ample evidence, much of it emanating from perceptive and thoughtful students, that being a good researcher does not, *ipso facto*, make someone a sound teacher. What we are saying is that in the grand plan of things, neither type of measure has an unchallengable right to ascendancy.

There is a final point here. As we have seen earlier, a substantial part of the accountability for professional surveying education in the public interest lies squarely with the professional surveying school and, in there, with the quality of teaching. In the changing times we do need to ensure a new intellectual thrust to surveying education replaces the narrowness of traditional mono-disciplinary surveying education often demanded by surveying practitioners.

Part Four - Reflections

Matthew Arnold once observed that a university is truly the home of lost causes and impossible loyalties. Perhaps so. There was also a time past when universities could occupy a sort of intellectual high ground - economy, efficiency, effectiveness were all terms emanating from the rather sordid marketplace. We have shown that this is no longer the case and that accountability, in its many forms, is now a powerful force in shaping universities and, with them, professional surveying education. The challenge today is to develop an academic environment which is accountable but which also promotes academic excellence and academic freedom in a business environment.

We have also found that accountability in professional surveying education involves some interesting, complex relationships between various societal institutions. This very complexity leads us to comment here that each accountability linkage should be mirrored by a sound line of communication. We know from experience that this is not always the case.

Then there is the matter of achieving excellence in teaching and research - are they really so compatible or is it rather the case that one drives out the other to some degree. That would appear to depend on the individuals and the institutional environment within which they work. Here, as always, a sensible balanced approach garnished with qualities of honesty, integrity and trust appears to be the judicious option.

Finally, there is the student of surveying - What of her?

"... we will have to realise that an important precondition for scientific and scholarly progress lies in the meeting of diverse disciplinary cultures, scholarly temperaments, individual styles of argumentation and national traditions of research. We have to make sure that every student is exposed to such a challenging and exciting intellectual environment as early as possible in his educational life."

[Lepenies 1990]

Once surveying could be a rather feverish search for the most modern and irresistible measurement technology. Increasingly, it will be historical, legal, as well as ethical and economic issues which will form an integral part of teaching and research in professional surveying education. From this there is no escape and academics and others will be held accountable.

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