

Implementing a Strategic University Resource Allocation Model During a Major Restructure¹

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Abstract

Prior to 2001, the University of Western Sydney (UWS) was a loose federation of three semi-autonomous institutions. Each member of the federated university applied quite different approaches to internal resource allocation. During a major restructure in 2001, UWS merged these three institutions into one unitary university. To facilitate this integration and to reinforce the strategic goals of the university, a new resource allocation model was developed for implementation from January 2002.

This paper describes the key principles of this resource allocation model and outlines the process of its development and implementation. While many of its features would not be considered novel, such as allocations to academic units being primarily revenue and performance-based, the model's reinforcement of the newly integrated structure has enabled historically-based budgetary allocations and cost structures to be challenged. In the context of a major restructure, such a resource allocation model has the potential to be a powerful tool for supporting strategic change.

¹ I would like to acknowledge the contribution of Professor Rob Coombes and Brian Lindsay, as well as other members of the UWS Business and Finance Committee, to the development of this paper.

Introduction

Like many other aspects of organisational decision-making and strategy development, the resource allocation process is usually characterised by a combination of rational planning, internal political negotiation and incremental adaptation (Mintzberg 1991; Weick 1993; Thomas 2000). While organisational theorists may focus on each of these factors in relative isolation, the reality is a complex interaction of ‘rational’, ‘political’ and ‘emergent’ processes, which operate to produce an outcome – in this case a resource allocation model. The relatively unique organisational form or configuration of universities also influences both the process and the outcome of internal resource allocation. As large “professional bureaucracies”, characterised by competing forces for academic autonomy and administrative control (Mintzberg 1979), universities face particular challenges in the development of their internal resource allocation models that are not commonly experienced in other types of organisation.

Furthermore, university structures and decision-making processes are under pressure to change as universities attempt to adapt to quite radical shifts in what was once a relatively stable operating environment. Universities, with their typically devolved management structures and collegial decision-making processes are not usually well-g geared to quickly adapt to such change. Managing strategic change in times of ‘crisis’ often requires strong top-down leadership, which runs contrary to traditional university cultures². In traditionally devolved organisations, decisions concerning how key resources are allocated can be an important mechanism by which senior executives can signal, shape and reinforce such strategic change (Pfeffer 1992). Thus while developing a new internal resource allocation mechanism in such situations will no doubt be problematic and subject to the political and organisational dynamics noted above, if its design reflects major strategic priorities, then it can influence managerial behaviour and reinforce strategic change within the organisation. This was the situation in the case described below.

This paper describes the development and implementation of a resource allocation model within a university undergoing major strategic change. It outlines the organisational context of the change, the process of development of the resource allocation model, the principles underpinning the model and analyses how the implementation of the model acted to reinforce the university’s new structure and strategic directions.

Organisational context

Prior to 2001, the University of Western Sydney (UWS) was a loose federation of three semi-autonomous institutions. Since the amalgamation of three colleges of advanced education in 1989, each member of the federated university independently operated its own academic programs, administrative systems and management structures and applied quite different approaches to internal resource allocation. This federated structure, coordinated by a small chancellery, was characterised by major resource management inefficiencies, in which management structures and systems were essentially triplicated. The advantages of local and regional autonomy for each member of the UWS federation became untenable in a period of reduced Government support, budgetary constraints and demands for more efficient allocation of scarce resources (Massingham 2001).

In a major restructure during 2000-2001, UWS merged these three semi-autonomous institutions into one unitary university. This involved a reduction of over 50% in senior management positions (Director-level and above) within the university and savings of over \$10 million in administrative and academic support costs. 56 academic schools and faculties were merged into 22 schools within 4 colleges. In addition, the complex process of rationalising and integrating academic programs was commenced. The establishment of four

² One CEO has described leading a university as akin to “steering an iceberg”, an apt metaphor for the inertia of universities in the face of change.

Colleges (Law and Business; Arts, Education and Social Science; Science, Technology and Environment; Social and Health Sciences) and four Divisions (Resources; Development and International; Corporate Services and Academic Services) formed the core of the new university structure.

This new organisational structure provided a unique opportunity (and indeed required) the development of a new resource allocation mechanism within the university. This resource allocation model was designed to reflect emerging strategic priorities, to reinforce desired performance outcomes from the four Colleges and to continue to contain administrative costs.

Resource allocation process and principles

The UWS resource allocation model was developed by a workgroup of senior executives, which was established by the Vice-Chancellor in early 2001. The goal of the workgroup was to complete the model by October 2001 in order for it to form a major component of the 2002 Budget. Membership of the workgroup included two Deputy Vice-Chancellors, a College Dean and Directors of Finance, Business Development and Planning and Quality³. Other senior staff were involved as necessary at different stages. Resource allocation models of other universities were reviewed, as was available literature on resource allocation in higher education. The committee debated and agreed on the broad principles to underpin resource allocation in UWS in a series of meetings during 2001 and drafted its operational mechanisms. These were then circulated to and discussed with senior UWS staff and the model fine-tuned accordingly. Modelling of different options and aspects of the resource allocation model was undertaken in order to examine the potential budgetary outcomes for the four Colleges, which were funded in 2001 on an expenditure-needs basis.

The resource allocation model is now an integral part of the University's strategic planning and budget development processes. It provides a capacity to fund the academic activities of the University on the basis of strategic priorities agreed by the University Executive and Board of Trustees. The aim was to move from a funding approach based on historical costs, as occurred in the transition to the new structure in 2001, to the use of revenue and performance-based criteria for funding academic activities. The resource allocation model applies these criteria to funding the core activities of teaching and research, and provides incentives for improving academic performance, quality and efficiency, as well as increasing non-government income. Its key features are outlined below.

Resource allocation decisions inevitably require trading off competing demands for scarce resources from a number of priority areas. To assist in making these decisions, a set of key principles was adopted to underpin and guide the development and operation of the resource allocation model (RAM). These are outlined below.

The first key principle is that *the strategic priorities of the University will guide resource allocation*. In broad terms, these priorities include

- improving the quality of teaching and learning
- improving research performance
- diversifying and increasing university revenue streams
- improving the flexibility and efficiency of educational delivery
- increasing community and regional engagement

Second, *incentives are provided to Colleges for performance on a range of factors related to these strategic priorities*, including research performance, income generation and academic quality and efficiency.

Third, *the RAM will be a driver of strategic change*, in that Colleges and Divisions have to adapt to the resource allocation drivers of performance. This will require shifts in historical

³ The author was also a member of the committee and participated in the development and implementation of the resource allocation model.

patterns of staffing and programs. Its implementation provides discretionary funding for strategic initiatives (such as community and regional engagement and corporate IT systems) and includes a capacity for consultation and review. The RAM is therefore not entirely formula-driven.

Fourth, *the resource allocation model should be relatively easy to understand*, and therefore err on the side of simplicity rather than complexity. Some universities have very complex statistical models for resource allocation, and most stakeholders do not understand their underlying mechanisms (Ross 1998). It is certainly possible to develop a model that reinforces the University's key strategic priorities without it becoming overwhelmingly complex.

Fifth, *for an initial period, the capacity will exist to smooth budget outcomes*, where the initial application of the RAM leads to major variances in College budgets. Because the model uses allocation mechanisms that are different from those previously used in UWS, it was expected that some Colleges may experience significant budget changes. While they would have to make adjustments to adapt to the new funding criteria, transitional funding would be available

The primary purpose of the resource allocation model is to provide revenue and performance-based budgets for the four Colleges. Colleges therefore have a direct incentive to reduce inefficiencies and to direct resources to areas recognised (and rewarded) as strategically important. These College budgets are determined in the model by allocating University funds according to performance in relation to:

- student load (weighted according to the discipline base of the unit or subject)
- academic planning, quality and efficiency indicators
- research performance, and
- onshore fee income generation (in award programs)

The funds available for allocation through the RAM include:

- Government-funded operating grant,
- fee income from on-shore international students and Australian fee-paying students in award programs,
- levies on off-shore, non-award, consulting and entity income, and
- other miscellaneous income.

Income from both DEST operating grant and onshore international and domestic fee-paying students (in award programs) is combined in the resource allocation model prior to distribution of funds. This is a strategic decision to treat income from all on-campus award enrolments in the same way, whether Government-funded or fee-paying. Both are part of the core business of the University and supported by University infrastructure and services. Combining these revenue streams also allows for greater flexibility in resource allocation.

At the same time, it is important to provide clear incentives to Colleges to increase their fee income. The model has been designed to ensure that a minimum of 60% of all onshore fee income from award courses is returned to the College earning that revenue. This is achieved by the combination of a fee income incentive and the inclusion of onshore fee-paying students in the weighted student load model. In most cases, the return on onshore fee-paying award courses is significantly higher than 60%.

Colleges also earn entrepreneurial and other income, including income from offshore and non-award courses. This income goes directly to the academic units and is subject to a University levy (ranging from 15% to 30%) to fund provision of infrastructure and services.

The model is applied only at the College level, not at the level of Schools. Colleges receive a one-line allocation which is then distributed internally according to each College's own plans, priorities and budgetary framework. This may mirror the RAM or incorporate other projects or variables which have strategic significance for the College's development.

The resource allocation model provides additional funding for research. This is both developmental (funding research centres, internal grants and research fellows) and performance-based (a significant proportion of funds are allocated to Colleges and research centres on the basis of research performance – i.e. research publications, research student graduations and external research grants gained).

Administrative and academic support unit budgets were established in 2001 as part of a cost benchmarking process in the restructure. This process cut approximately \$10m in underlying costs from these areas (including the senior executive). These savings flow through to fund core academic activities. The administrative and academic support budgets are taken off the top of revenues in the resource allocation model.

To ensure that the proportion of the University budget devoted to academic activities continues to increase relative to non-academic activities, it was decided to index the budgets of non-academic (Divisional) units to grow at either 75% of overall revenue growth, or at the rate of overall cost growth, whichever is the lower. This meant that if the rate of the University's overall cost growth was higher than 75% of the rate of revenue growth, then the non-academic budgets would only be indexed to grow at the lower rate. This means that non-academic areas must continue to work at cost containment.

Before the College and Divisional allocations are made, amounts for strategic initiatives, capital works and University-wide systems projects are determined annually by the University Executive and relevant Board Committees and taken off the top of revenues. The level of this funding varies according to the strategic directions and priorities established and approved by the Vice-Chancellor and Board of Trustees and provides a degree of strategic flexibility in resource allocation.

It was realised that implementation of the resource allocation model would result in significant variation in some College budgets from their 2001 position. Where the budget decreased, this was due to the historical cost (and staffing) position being unsustainable on the basis of performance indicators such as student numbers, research performance and fee income. Where the budget significantly increased, this was the result of previously "unrewarded" high performance on at least some of these indicators. In the short term, it was agreed to smooth any large variations in College budgets. For the first year of implementation, if a College budget declined by more than 2.5% from its 2001 Budget, then assistance was provided to that College from University accumulated reserves, to enable it to manage the transition in 2002. That is, any decline above 2.5% of the College budget was to be covered by transitional funding. This affected two Colleges in 2002. To provide an example of the scale of the funding shifts involved, one College had to absorb a budget cut of \$1.2M even after transitional funding was applied, while another College budget increased by over \$4M.

Funding of Academic Activities

Teaching load. A significant proportion (73%) of the academic activities funding is allocated to Colleges on the basis of weighted student load. This links College funding to student enrolments. Disciplines are weighted between 1.0 and 2.5 based on the relative costs of undergraduate teaching, using average discipline weightings from a sample of twelve universities. Postgraduate coursework and undergraduate honours courses have an additional weighting (0.5) applied. Higher degree research student load is funded under the Research Training Scheme and not from this weighted load model (see below).

Calculations of weighted load are made at the individual unit (subject) level, and units are allocated to discipline bands for this purpose. Funding goes to the College "owning" and responsible for teaching of the subject. Cross-service teaching between Colleges is dealt with by Colleges agreeing the proportion of responsibility (and student load funding) to be allocated to each College. The subject weights are determined according to the discipline base

of the subject content and not according to the course, School or College in which the subject is located.

The weighted load model is based on prior year actual student load. Weighted load funding applies (at the same rate) to both operating grant load and onshore international and domestic fee-paying load in award courses. Courses with practicum, clinical or professional experience components have an additional weighting built into the existing weighting for subjects in that discipline. This additional weighting, for example, applies to subjects in Education, Health and related fields, thus providing additional funding for practicum and clinical experience.

Higher degree research (HDR) student load is not funded from the weighted load model. HDR load is funded primarily from the Government Research Training Scheme (RTS) funds, which are identified separately from the operating grant from 2002 (see the section below on 'research activities'). In addition, any DEST funding received for higher degree research 'gap' places are allocated on the same basis as the RTS funds.

Research activities. Funding for research activities is based on three main components. First, UWS funds for specific research programs are taken 'off the top' of the funding pool. This includes strategic funding for selected research centres, internal grants and external collaboration.

Second, in the resource allocation model, a proportion of the total academic activities funding (9%) is allocated to Colleges on the basis of relative research performance (i.e. research student completions, publications and research income).

The third area of funding for research activities consists of the distribution of DEST-specific funding for research activities received through the Institutional Grants Scheme (IGS), the Research Infrastructure Block Grant (RIBG) and the Research Training Scheme (RTS). The IGS, RTS and RIBG funds are allocated to directly support research activities. 80% of the IGS funding is allocated to Colleges and Research Centres on the basis of performance, with 20% being used to fund strategic research initiatives. RTS funding is distributed for research scholarships and to Colleges for research support on the basis of performance. 100% of the RIBG funds are distributed to Colleges and Research Centres on the basis of performance.

On-shore fee income incentives. With on-shore international and domestic award student fee income combined with DEST operating grant revenue for allocation purposes, it was considered important to provide incentives to Colleges to increase their onshore fee income. (Off-shore, consulting and entity income go directly to the academic unit and have a separate incentive treatment).

In addition to funding onshore (international and domestic) fee-paying load in award courses through the weighted load model on the same basis as operating grant load, a proportion (9%) of the academic activities budget is allocated to Colleges based on to their share of total onshore international and domestic fee income.

Actual return to individual Colleges is estimated to vary between 60% and 74% of College fee income. This variation occurs because the weighted load funding received by a College does not necessarily vary directly with the fee income received (although the fee incentive does).

As noted earlier, the RAM creates a College-level budget allocation. This College allocation is then distributed internally according to each College's own plans, priorities and budgetary framework. This may mirror the RAM or incorporate other projects or variables which have strategic importance for a College's development. The RAM, therefore, does not specify how a College should internally allocate the revenue it receives through the model, including funding received for onshore fee-paying load.

Academic quality and efficiency incentives. The model provides for a proportion of the academic activities funding (9%) to be distributed to Colleges on the basis of performance on a mix of qualitative and quantitative criteria for academic quality and efficiency.

A process for annual academic planning and quality reporting by Colleges is currently being designed, and this will be linked to funding. This component of academic funding provides a degree of strategic flexibility to rationalise and reshape the academic programs of the University, and to reward quality improvement.

Half of this funding will be distributed to Colleges based on an assessment of College academic plans, and half allocated to Colleges on the basis of other (quantitative) performance measures. These academic planning and performance criteria are currently being developed. For 2002, the academic quality and efficiency funding was allocated to Colleges on the basis of weighted load.

Treatment of Other Income

Other academic-related earned income, such as consulting, off-shore teaching, entity income and some miscellaneous income is be subject to a University levy (set as a percentage of that income). Much of this income is earned from specific projects which are separately budgeted, reviewed and project managed. The specific University levies set would vary depending on the type of income stream.

Income from off-campus non-award teaching, offshore fee income and consulting income are subject to a 15% University levy. On-campus non-award fee income is subject to a 30% levy.

Fee-paying award programs specifically contracted to be provided for and paid by an employer organisation or other agency will be treated in the same manner as non-award fee-paying programs. This treatment allows these contracted programs to be treated as entrepreneurial projects, which are subject to independent review and assessment.

The diagram at Appendix A provides a schematic illustration of the resource allocation model.

Lessons Learned

Listed below in dot point form are some general lessons learned during the process of development and implementation of the resource allocation model:

Target macro indicators for allocating resources to larger budget units such as Colleges, rather than seeking to determine micro-level unit budgets of schools and departments. This gives the Colleges flexibility and a degree of autonomy to vary their internal budget allocations.

Design the resource allocation model to make a difference rather than reinforce the status quo. Significant funds should be allocated as a result of performance indicators that reinforce strategic priorities rather than historical costs.

The senior executive of the university should be closely involved in the development of the key principles underpinning the model and in the debate over its form and outcomes. This includes having a senior member of the university executive leading the project and championing it both to senior staff and the broader university community. This is critical to ensure a corporate (university-wide) strategic view is adopted and to avoid the problem of having the implementation of the resource allocation model essentially over-turned by lobbying from powerful affected parties. (This has happened in another university, where resistance to the outcomes from a new resource allocation model caused the model to be effectively abandoned or made ineffectual.)

There will be interminable debate over the discipline weights applied to subject units. This will always have to be a case of “making do” and trying to reach a generally acceptable outcome— there is no real optimal solution.

Wherever possible, use actual rather than planned performance to drive outcomes. Allocate resources based on actual student load, fee income and research performance. This will necessitate using historical figures in some parts of the model which may lag current practice

(e.g. research performance and student load). In other parts of the model, the actual income earned during the year will determine the return to academic units.

It is difficult to define and quantify acceptable and valid academic indicators for the quality of teaching and learning. While the resource allocation model discussed here has potentially significant funds to be allocated on the basis of (non-research) academic quality indicators, these have not yet been fully developed and implemented. While qualitative reviews of College academic plans are part of the resource allocation process, the quantitative performance indicators are most problematic, as recognised by the Higher Education Review paper “Striving for Quality” (DEST 2002).

Restructure, resources and quality initiatives

With such an emphasis on integration, rationalisation and efficiency during the restructure and on quantitative performance indicators in resource allocation, it was recognised that significant attention was also required on ensuring that the quality of service to students, staff and other stakeholders was maintained and enhanced. The major restructure of the university, in which both administrative and academic units were re-shaped across the University’s six campuses, was necessarily quite disruptive. During 2002 the Vice-Chancellor launched a major review of the quality of service in administrative and academic support areas, with the aim of identifying problem areas and targeting resources to improving service quality within the newly integrated university. Seven major university-wide projects have been identified which will be coordinated through a quality of service program management office.

In addition, significant funds have been allocated for strategic initiatives to improve quality and effectiveness in the design and delivery of academic programs. Using this combination of performance-based and developmental funding, issues of both efficiency and effectiveness are being addressed in resource allocation.

Conclusion

The UWS resource allocation model was implemented in 2002. It provides a capacity to fund the core academic activities of the University on the basis of agreed strategic priorities. At its core is a student-based funding model for the four Colleges. This is supplemented with significant funds for strategic support of research performance, incentives for improvements in academic quality and efficiency and for generation of non-government income.

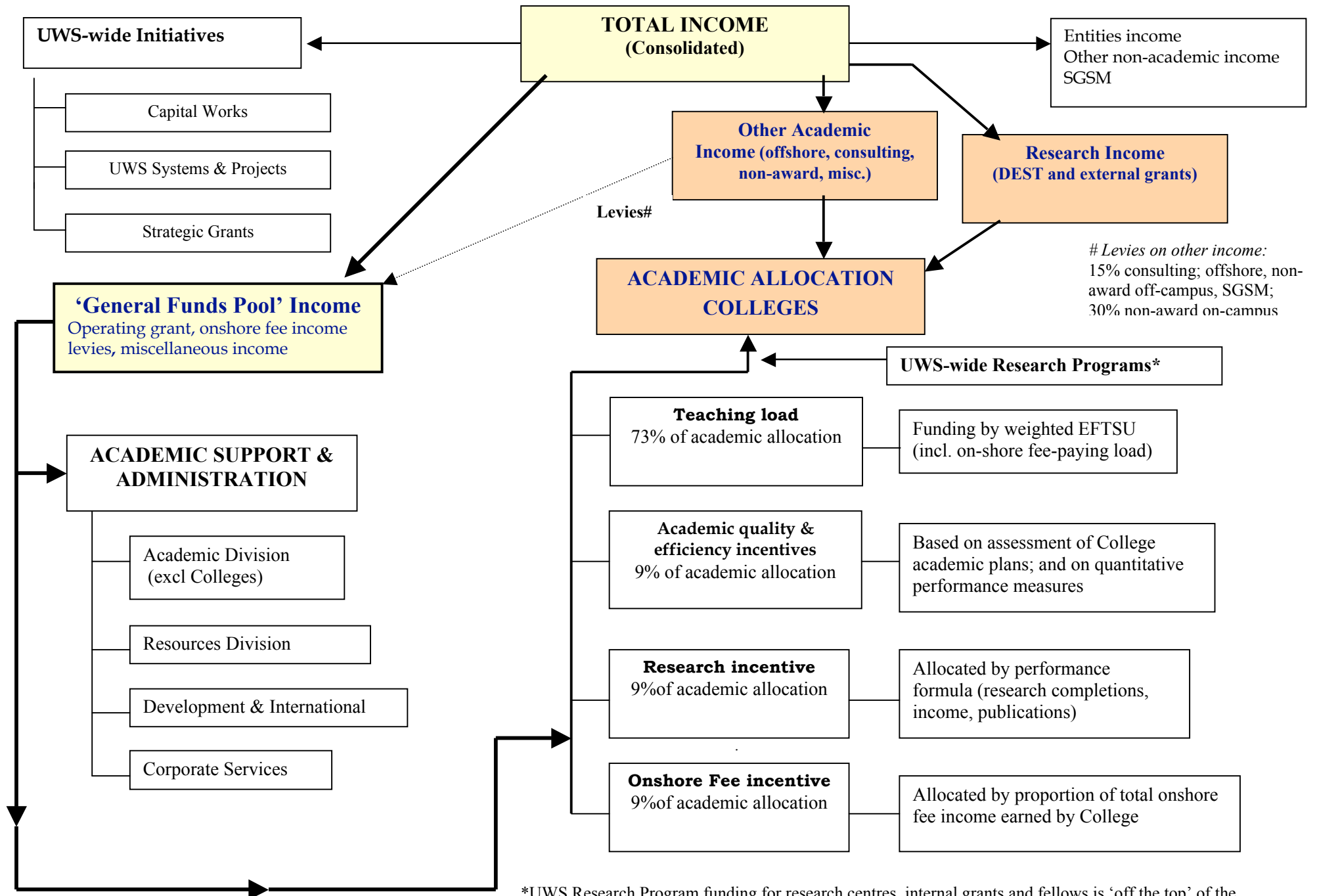
The model has been the subject of ongoing consultations with senior UWS staff and has been operationally fine-tuned in response to feedback. Subject weightings applied in the weighted load model have been reviewed and revised in consultation with Colleges. While the transitional 2001 Budget was based on estimated costs of academic units, the new model generates budget outcomes that are related to performance rather than costs. Because it is a “macro” model that does not distribute funding below the College level, Colleges have a direct incentive to reduce inefficiencies and to direct resources to areas related to performance. These incentives are certainly significant enough to stimulate action and change organisational behaviour (Piper 1995). The type of performance most rewarded will vary between Colleges depending especially upon their relative competencies in research, fee income generation and high-demand student programs. Colleges also have the flexibility in how they allocate resources within the College and can choose to nurture strategic or “flagship” programs.

Universities face declining direct Government grants and are increasingly reliant on performance-based funding, whether sourced publicly or privately. This creates pressures for increased accountability for how resources are managed and changes in how universities manage and distribute funding. The development of a new resource allocation model which reinforces new organisational and management structures and rewards performance that aligns with strategic directions has been timely for UWS.

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APPENDIX A



*UWS Research Program funding for research centres, internal grants and fellows is 'off the top' of the academic allocation. This is additional to DEST & external research funding and the research incentive.