

An Examination for Activity-Based Costing (ABC) Implementation in Australian Universities

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Abstract

In this study the contribution of activity-based costing (ABC) in overhead cost allocation systems within Australian universities is examined. A questionnaire survey from 27 finance directors and/or chief financial and cost accountants is analysed. ABC as a strategic cost management system depends on certain variables, for instance, understanding ABC, strategic cost, reduce expense, better overhead cost allocation and value creation. The result of analysis of the variance is found significant (0.022) at 0.05 for hypothesis H1 and H2 is proved significant theoretically using management and internal champion support. The findings indicate substantial differences in the allocation of overhead costs between ABC and traditional costing systems. The survey results and interviews reveal that some Australian universities using the ABC method received benefits, in improving cost reduction and better resource allocation with revenue surplus. The paper finally develops a generic model of cost pools and drivers of ABC implementation in the universities.

Key words: *A model for ABC implementation, improvement in cost reduction, Australian universities.*

Introduction

Activity-based costing (ABC) is a new costing method of analysing business operations that leads to cost identification (trace direct *vs* indirect) and cost classification based on activities. Originally developed by Johnson and Kaplan (1987), the ABC model has revolutionised costing systems. Activity-based costing is necessary for globalisation of markets, products and services deregulation and technological explosion. If ABC is implemented, it will reduce the costs and improve the resource allocation and may result in improved resource allocation consistent with strategic objectives and budget surplus of the universities. It will also enable university students and the community to determine the true cost and profitability of the individual courses and the feasibility of university degrees with cost benefit analysis. Since ABC is a strategic cost management technique, its use will help the particular university to compete with others nationally and globally. It will also help in benchmarking.

Background to the study

The universities in Australia have been passing through a dramatic change over

Over the last two decades (DEET, AGPS 1991,1993). Most of them are publicly funded by the Department of Education, Employment and Training on behalf of the Federal Government and the Ministry of Education of the individual state government. The per Equivalent Full-time Student Unit (EFTSU) has declined and the government has advised the universities to generate their own fund by increasing fees and reducing operating costs. The planned dollars per EFTSU are declining dramatically and the Australian universities are expected to become more efficient through improved resource allocation and utilisation resulting in overall budget surplus (Sharma 1989, p.19). In addition to these changes, all the Australian universities are facing quality audit and institutional accountability for their costs and efficient performance in quality teaching and research. Many universities are going for organisational structural changes to achieve strategic objectives by merging different faculties, schools, divisions and departments. The objective is to save costs and increase surplus revenue.

The present Australian Federal Government, under Prime Minister John Howard, has signalled its intention to build performance indicators at the universities and introduce cuts to higher education funding. The government is putting pressure on universities to gain efficiency and the universities are under scrutiny of costs on a comparative basis. The Federal government, in 1998, sponsored an enquiry into the higher education sector in order to apply activity-based costing (ABC) as the basis for comparative assessment. The Department of Education, Training and Youth Affairs (DETYA) appointed consultants Ernst and Young to survey universities, especially on their costs and budgeting system, and they proposed an activity-based costing. ABC was tested by Ernst and Young initially at four universities, namely Charles Stewart University, Murdoch University, University of Western Australia, and RMIT University. DETYA was interested in looking at costing data for courses, units of study, student types and research grants. The Ernst & Young documented its ABC cost studies and focused on human resource management, facilities management and faculty costs of the four universities individually in form of a final report (Ernst & Young, May 2000).

In the mid-1990s, a survey of Australian manufacturers found that only 12 per cent adopted ABC and 29 per cent planned to implement (Zaman, M. 1997). The survey also revealed that 45 per cent did not consider ABC implementation and 14 per cent totally rejected (Langfield-Smith *et al.* 2003; Booth & Giacobbe 1997). A survey by Australia's CPA ranked ABC 22nd in importance from a list of 33 techniques (Langfield-Smith *et al.* 2000). ABC has also been implemented in the local government in Victoria (Langfield-Smith *et al.* 2003). The Department of Education, Training and Youth Affairs (DETYA) of the Australian Federal Government has also promoted ABC within universities. In 1998, DETYA engaged Ernst and Young to develop ABC methodology for Australian higher education institutions. Professor John Jackson, Deputy Vice Chancellor of Royal Melbourne Institute of Technology (RMIT) reported "ABC has been used in RMIT".

Lessons Learnt during the Implementation of ABC

Some of the lessons learnt from earlier research findings on issues relating to implementing activity-based costing have been discussed here. In order to

implement ABC systems, the management must make difficult decisions about customers and products. To reap full benefits, it must initiate cross-functional teams and empower them to take wide-ranging decisions (Gearing, 1999). Dr Michael Gearing, Head of the Department of Performance Improvement for KPMG, South Africa, reported that KPMG, along with Professor Robert Kaplan, has been involved in many successful implementations of ABC projects. The survey also revealed that 45 per cent never considered implementing ABC and 14 per cent totally rejected its implementation (See *Langfield-Smith et al., 2006; Booth and Giacobbe, 1997*). A survey by Australia's CPA ranked ABC 22nd in importance from a list of 33 techniques (Langfield-Smith *et al.*, 2006). The Australian experience of ABC implementation is not very encouraging but some of them have already implemented ABC and many universities are planning to implement it. No wonder, a current study on ABC implementation in Australian universities is urgently called for. There are numerous examples of successful ABC implementation from abroad, especially from the USA (Langfield-Smith *et al.*, 2006).

Objectives of the Study

The objectives of the study are to

- identify the number of Australian universities that are using activity-based costing (ABC).
- find out how many universities are planning to implement ABC in the future.
- identify impediments in implementing ABC at Australian universities.
- test a set of independent strategic variables (cost drivers) that may motivate top and middle management and other employees to implement ABC.
- support ABC implementation at the universities in Australia as a strategic cost management system, and
- develop a generic model of viable cost drivers and cost pools that may be used by the universities in Australia in order to implement ABC

Statement of the Problem

One of the problems faced by the Australian higher education sector is the use of traditional costing and financial accounting systems to meet the requirements for external reporting and audit. "These may be important and essential but they failed to provide minimal internal flexibility and information beyond being ... extension of the institution's general ledger" (Ernst & Young, 2000). However, they (1999) proposed an activity-based costing and management methodology which was tested at the three universities: RMIT University, Charles Stuart University, and Murdoch University. The cost studies were limited to human resource management, facilities management and faculty costs. But the stressed priorities of DEYTA in looking at the costing data were courses, units of study, student types and research grants. Ernst and Young (2000) released its final report, "A study to develop a costing methodology for the Australian Higher Education Sector." Upon the release of the report and based upon the DEYTA pilot study methodology, the University of Newcastle's Information and Education Services Division initiated an activity-based costing and management pilot project in February 2000. The university used ABC

is a tool for better linking the division's plans with budgets and improving the decision-making processes within the division. It was expected that other Australian universities would adopt the activity-based costing system as the study was seen for the determination of an accurate estimation of the funding level required by particular divisions, faculty and schools for tracking their true costs of activities.

The ABC study provided an opportunity with better information on the costs of individual activities and may contribute to continuous improvement through benchmarking with other Australian universities. Some other Australian universities have initiated the implementation of ABC such as Monash, Wollongong, Western Australia (T. Gerdson), but there are a lot of oppositions from most of the universities. In the 1998b survey of universities, Ernst and Young noted the challenge in implementing the new ABC costing methodology is the dealing with cultural resistance. In an earlier study, Doyle (1994) had cautioned about difficulties in comparing different costs within the different divisions of the same university and between the similar activities carried out by different universities. The result of the Ernst and Young, 1998, survey revealed that 42 per cent staff considered that ABC would not be accepted within a university, while 29 per cent believed that it would be accepted and the rest remained undecided.

The importance of ABC implementation at the Australian universities and higher educational institutions has been felt by the federal government, and the state governments, the Ernst and Young consulting CPA firm and some universities implementing and benefiting, yet many universities and higher learning institutions have not taken the initiative to implement ABC. Under the circumstances, an investigation is undertaken to find out the problems of ABC implementation at the Australian universities in the light of the significant changes that have occurred. Activity-based cost management is now increasingly seen as a strategic tool for achieving organisational objectives under the new competitive environment of the higher education sector.

Literature Review

There are several researches carried out over the years regarding activity-based costing (ABC) implementation and cost allocation within university premises, particularly for support services. Deacon and Huntington (1987) reported the increasing demand of Australian universities for institutional accountability and encouraged them to rethink their organisational structures and methods of decision-making. The Department of Employment, Education and Training (1990) developed a policy to use a funding model related directly to current patterns of institutional expenditure rather than costs-based ideal inputs. Cooper and Cook (2000) noted ABC as the alternative economic modelling approach with more modern concepts of costing. Sharma (1995) developed a model for calculating programme and graduate unit cost and applied it to an institution. The result was within five per cent of the expectation. Kober *et al.* (1996) surveyed the application of ABC to human resource management in Western Australian universities and reported an increasing demand of institutional accountability in terms of university costs and performance. Goddard and Ooi (1998) assessed the role of ABC in solving the problem associated with central overhead cost allocation to library services at the University of

Southampton and the propositions showed a substantial difference in allocation of the cost through ABC implementation compared to the existing system. Heskin and Sharma (2001) undertook an ABC study of the discipline of social and behavioural science in an Australian university and proposed a methodology leading to future implications in the pilot study. Alejandro (2000) developed an ABC model at the higher education institutions to measure the costs of academic programmes. Although the process of implementation was complex, the model was implemented successfully in the academic environment. Gerdson (forth northumbria) developed a model that has sector-wides applicability requiring minimal future development or adaptation at university level with a view to refinement as a standard tool for benchmarking and costing for support services in Australian universities. Cook (2003) developed a model at the Washington State University to gain information about the costing of different distance education courses and found very positive results critical to strategic planning and to adapting new technological developments. Heaney (2004) discussed the ABC model of Oxford University library services and hoped to boost the operation efficiency of 30 federated libraries and services at Oxford University. The studies in Australian universities include Rumble (1989) at Deakin University, Doyle (1994) at the University of Technology, Sydney. Izan *et al.* (1995) at the University of Western Australia, Gerdson at the University of Newcastle and Ellis-Newman *et al.* (1996) at Edith Crown University and the University of Western Australia. Those studies focused on the identification of administrative cost, support cost as well as total cost ie cost drivers and pools with performance measurement and improvement. Kober *et al.* (1996) reported on the special studies by the Australian Vice Chancellor Committee, which indicate the pressing need for universities to reform their administrative operations and to develop a streamlined and integrated system. The literature suggests that there is a good opportunity to explore the governing fact of activity-based costing within the whole university costing system and the application of ABC technique to educational institutions.

Certain Common Threads of ABC Implementation

1. *Capture the attention of top management:* Without top management support any change in an organization's systems is not possible as ABC implementation needs a substantial change in the organization. The imagination of the management has to be captured in order to capture their attention. For example, at a steel distributor in Germany, the management was convinced that coiled steel was their most productive product group and that motivated the top management to implement ABC.
2. *Don't shoot the customer:* The temptation to cut unprofitable customers or products might come when the first ABC results come through. But multifunctional teams must be set up with the target of finding creative ways to make the customer or product successful. For example, in a fast-moving consumer goods company, the issues of serving thousands of tiny outlets were disturbing the distribution process. Customers were either very large or very small and the Pareto curve was nearly a step function. A team representing sales, marketing and logistics was able to introduce third-party wholesalers into the chain, significantly

reducing the cost of servicing the small outlets. As a result the range increased and the service level improved. So the cost saving exercise could be sold as an increase in value to the organization.

3. *Decide the form ABC will take:* There are three forms of ABC implementation: (a) as a one-off project, (b) as a model to support strategic decision-making, (c) by implementation as systematically drawing real-time information from company data. It is important to decide up front which of these approaches will be used. Experienced consultants are often put together a one-off ABC analysis during the scoping phase of a project with a view to focusing on the big-impact cost drivers and attracting the attention of top management. Now in real-time ABC many integrated packages offer built-in ABC functionally and middleware packages are added to standard databases.
4. *Supplement the ABC measure creatively where appropriate:* Supplementing ABC techniques strengthen the tool without damaging propensity for action. Bottleneck accounting and value-added analysis are two recent fashions.
5. *Challenge managers who believe their costs are fixed:* In many industries it is a perceived wisdom that a driving issue is the fixed cost and filling unused capacity becomes the priority, but sometimes variable costs like materials and labour are not negligible. For example, in a private hospital the management was focused on maximising the use of recently purchased expensive machines. In fact, the doctors, whom the management saw as fixed payroll costs, were even more expensive than machines.
6. *Calculate costs top-down and bottom-up:* When ABC was first introduced a key issue was whether to calculate the cost per cost driver from the top down or bottom up. The current practice is to do both. The top-down approach provides a crosscheck and ties the numbers back into the accounting systems. The bottom-up approach also makes the parameters transparent and helps distinguish between value and non-value added activities.
7. *Account for cost of capital:* Cost of capital is not taken care of by either the top-down or bottom-up approach. Traditional accounting views inventory, buildings, and equipment as assets in the balance sheet, but modern managements see these as opportunity costs.

Use multi-functional teams: ABC implementation needs multi-functional teams. In business this means that people with different perspectives, including managers from different functions, must be compelled to deal with the problems that are critical for a business as a whole. Implementing ABC represents a major change in the way an organization does business. ABC needs to be led, not managed, and it must be done from the top.

Hypothesis of the study

Many studies have been undertaken for the implementation of ABC in manufacturing organisations and in some service organisations, but a very low number of researches have occurred within the Australian university system (DEET, 1993). Most of the ABC research studies at Australian universities have been done

on library, information technology services and human resource division areas. The present research will examine whether ABC can be treated as a strategic cost management system to achieve the strategic objectives of the universities. It will also examine the internal champion support (Brown *et al.*, 2004) that understanding ABC by the Chief Financial Officer with the support of the Chief Executive Officer (Vice Chancellor) may result in ABC implementation at the universities in Australia (Booth and Giacobbe, 1997).

Internal champion support is a kind of support of a person within the university/organisation that promotes the cause of innovation and acts as a champion to educate senior managers and users about a new system like ABC project and its need for implementation (Premkumar and Potter, 1995).

Based on the above discussion from the literature review, two general hypotheses are proposed:

H1: Treatment of ABC as a strategic cost management system (Predictors: value creation, understanding of ABC reduces expense, strategic cost, and the strategic overhead cost allocation system) is positively associated with the decision to implement ABC at the Australian universities.

H2: Top management support and internal champion support are positively associated with the implementation of ABC.

Research methodology

Sample selection:

The sample comprises all the 38 universities in Australia (Australian Vice Chancellor Committee, AVCC, 2006). The participants were the finance directors, chief financial officers and cost and management accountants, and other senior executives relating to finance, budget and costing from all the 38 Australian universities. An ethical clearance was obtained by the project director from the CQ University's Research Services Office before sending the questionnaire to the participant subjects. Each participant was contacted by phone/ e-mail to obtain his/her consent to participate in the survey before sending the questionnaire by mail/e-mail.

Data collection

The data was collected by sending survey questionnaires to selected participants by e-mail and by mail with a self-addressed envelope to increase the response rate. A preliminary study was conducted on the universities already using activity-based costing. The data was also collected using the case study research method through a direct interview. The collection of data for this study is governed by the NHMRC and CQU policy. This study employs multiple data collection methods, including a questionnaire survey and personal interviews. The collected data is analysed by content analysis for qualitative data and by the SPSS programme for quantitative data. In order to preserve the rights and safety of the participants, the rules on ethics and confidentiality in collecting data are followed. In addition, details of the variables and the questionnaire design to test research questions in the questionnaire have been outlined.

Survey instrument and procedures

A questionnaire was developed as the survey instrument incorporating university profiles followed by questions specific to the use of ABC implementation. A number of measures were taken to enhance the response rate using reply-paid envelopes, assuring participants that their responses would be treated as confidential and the aggregate responses would be reported to them after the data analysis was completed. Telephone interviews were also conducted.

A three-page questionnaire was developed incorporating general information on the personal data of respondents, some general questions in the form of "yes" or "no" on the understanding and implementation of ABC and the benefits and problems of its implementation. The other questions were directly related to the variables of the strategic cost management system to develop a model for testing the hypotheses. Seven-point scale questions were used to collect data on the implementation of ABC.

The survey instrument was tested through a mail-out of up to 25 per cent of the universities on a random sample leaving 75 per cent for the final mail-out. In the pilot study involving 25 per cent universities, 15 per cent questionnaires were returned within three weeks and the responses received were as per the expectations. The remaining 75 per cent were sent to the respondents after contacting them by phone/ e-mail. Out of 38 universities, 21 Participated in the survey. So the sample size was reduced to 21 and 28 completed questionnaires were received from 21 universities. The questionnaire response rate was 100 per cent from the agreed participants, while 56 per cent of the universities participated. The universities which participated are shown in Table 1. It is found that nine universities have implemented ABC, while eight have planned to implement it in near future and three do not have any plan to implement it yet.

Research Findings

The finance directors, chief financial officers, and cost and management accountants of the 20 responding universities displayed a wide range of variability on the characteristics surveyed. Most of them were experienced accountants and aged between 25 and 59 years. Most of them have the graduation and master's degrees in accounting and are members of either the Australian Society of CPA or the Institute of Chartered Accountants.

As a part pf the project plan, only eight agreed participants from different universities' chief financial officers and /or finance directors have been interviewed over the phone. The spokespersons from Murdoch University stated they had just started to develop a unit costing model and capturing some elements of cost in relation to the unit but it would be verified. They started with tracking academic time and maybe some administrative time within the division had been captured as well. They are planning a strategy to look at how they deliver and what they deliver and if they should deliver everything that they offer currently. The performance of a school should be judged simply by looking at high-level financial information. Then identification of the opportunity within the school to reduce cost is necessary looking at the activity and the costs being allocated where they

are spending a lot of time. The decision should be based on activity-based costing depending on drivers and strategic reason. So even though the data may say it is not possible to identify activities, it may well support something else.

The spokesperson from the University of Newcastle said the results they are receiving are qualitative in nature and give an understanding of the financial impact on various courses and programmes. It is interesting to identify some broad rules of thumb and get some indication about which courses and programmes are not financially viable or sustainable.

The finance division received appreciation at the level of Head of School and Dean as they are able to manage their financial situation. The university gives them a budget for the year and it is ultimately within their control to ensure that they are not operating under financial stress and know the essential economy of the skeleton in terms of student load per subject. The budget model is really the annual process system and ABC allows the University of Newcastle budget planner to better understand which area is under financial stress and/or has got excess capacity and pay budget accordingly which help to be more strategic in the budget process.

The spokesperson from Monash University stated that they have had activity-based costing for more than five years and identified that the biggest problem from the implementation point of view is changing the working environment and getting something like this into university is changing the management. For a non-profit organisation like a university, the management structures are based on teaching and research, research outcome, quality of research and teaching and are not for making profit, and that is why they are evaluating the performance which is very difficult. For costing process, they have incentives to be able to manage cost better and want the way to how finance is actually managed.

The spokesperson from the University of South Australia believes that they are in the stage of developing a cost model that can inform on university overhead, which is almost half of the organisation, all the central administration and infrastructure. They are using the costing result that has set the levy rates. So in that way the amount of overhead that has been identified is more appropriate than before and better costing will necessarily reduce the cost. *The concluding comment is that universities which implemented activity-based costing feel more confident about their results and are more enthusiastic.* Now they have started to use the results in a particular way rather than very directly.

The spokesperson from the finance division of the Central Queensland University believes that ABC is a valuable overhead cost allocation system in the manufacturing environment and slightly agreed to its use in the academic environment although he strongly agreed that ABC is a valuable overhead cost allocation system. When the interviewer informed him of the benefit received by the universities like Monash, Newcastle, and James Cook which had implemented ABC and why it was not implementable at the Central Queensland University, he replied that ABC implementation was not cost effective. He also mentioned the problem of finding the real cost drivers of teaching activities of the present courses. He mentioned that CQU has applied for a grant from the Federal Government for redoing budgeting

and cost management processes and on receiving grant, it might adopt ABC. He mentioned that "We are teaching 193 courses, where 50 per cent of our student load is, and we deliver 1,200 courses, where the other 50 per cent student load is and the fundamental problem is in that equation."

Discussions

Table 1: List of Universities associated with ABC that participated in the survey

<i>Implemented</i>	<i>Plans to implement</i>	<i>Not implemented</i>
Monash University (5+ years)	Latrobe University (5 yrs)	University of Technology, Sydney
University of Newcastle (3 yrs)	University of Western Sydney (4 yrs)	Central Queensland University
Curtain University of Technology (<1 yr)	Charles Stuart University (2 yrs)	Murdoch University
Southern Cross University (1 yr)	University of New England (1 yr)	Deakin University
Edith Crown University (3 yrs)	University of Tasmania (1 yr)	
University of South Australia (< 1 yr)	University of Canberra (2 yrs)	
Charles Darwin University (5 yrs)	University Western Australia (3 yrs)	
James Cook University (2 yrs)	Queensland University of Technology (3 yrs)	
Bond University(2 yrs)		

From Table 1, it appears that out of 21 responding universities, nine have already implemented ABC, eight are planning to implement it in near future, and four did not implement it. However, the spokesperson from the Central Queensland University expressed optimism about implementing ABC if the university received special grants from the Federal Government already applied for. The data has been analysed using SPSS version 13.0.

Table2: ANOVA results of independent variables

<i>Model</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Regression	3.790	5	0.758	3.367	0.022
Residual	4.728	21	0.225		
Total	8.519	26			

Predictors: (Constant), value creation, understanding, reduces expense, strategic cost management, and overhead cost allocation.

Dependent variable: implementation.

The ANOVA table tests the acceptability of the model from a statistical perspective. The significance value (0.022) of the F-statistics is less than 0.05, which means that the variation explained by the model is not due to chance. While the ANOVA table is a useful test of the model's ability to explain any variation in the dependent variable, it does not directly address the strength of that relationship. In order to test H1, F-test using multiple regression was deemed appropriate. The result of each F-test is 3.367 and significant at 0.022. The results of all the independent variables are highly significant at 0.05. This provides a strong support for hypothesis H1. The significant correlation coefficient ($F=3.367$, $p=0.022$) shows that Australian universities are likely to implement ABC to meet the corporate strategic planning objectives. Separate correlation tests were also conducted for each independent variable of ABC implementation. In the open-ended questionnaire and in the telephonic interview, most of the respondents viewed that internal champion support (Brown *et al.*, 2004) ie chief executive officers like Vice-Chancellor and Chief Financial Officer's support and promotion are essential for implementing ABC at universities in Australia. This provides a strong support for hypothesis H2. However, there is no statistical support to test this hypothesis.

Table 3: Result of the independent variables showing beta coefficient

Model	Un-standardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	t
(Constant)	0.194	0.375		0.517
Reduce expense	-0.240	0.137	-0.754	-1.754
Understanding	0.104	0.166	0.186	0.628
Overhead cost allocation system	0.283	0.181	0.870	1.565
Strategic Cost management system	-0.027	0.164	-0.091	-0.167
Value creation	0.123	0.157	0.375	0.787

Dependent variable: implementation

The size of the Beta weights indicates the strength of their independent relationships. From the table it can be seen that reduce expense has the strongest relationship with activity-based costing whereas understanding the topic, overhead cost allocation, and value creation have a limited significance.

Development of a generic model for cost drivers and cost pools for ABC implementation at the universities in Australia is an important contribution to the literature (See Figure 1). The data collected from three ABC implemented universities have been used to develop a generic model for the cost pools and cost drivers of ABC (Figure 1). The model consists of ten cost pools and 53 cost drivers. In the model mainly the major university costing activities have been listed, although more details about cost drivers may be required in practical application. However,

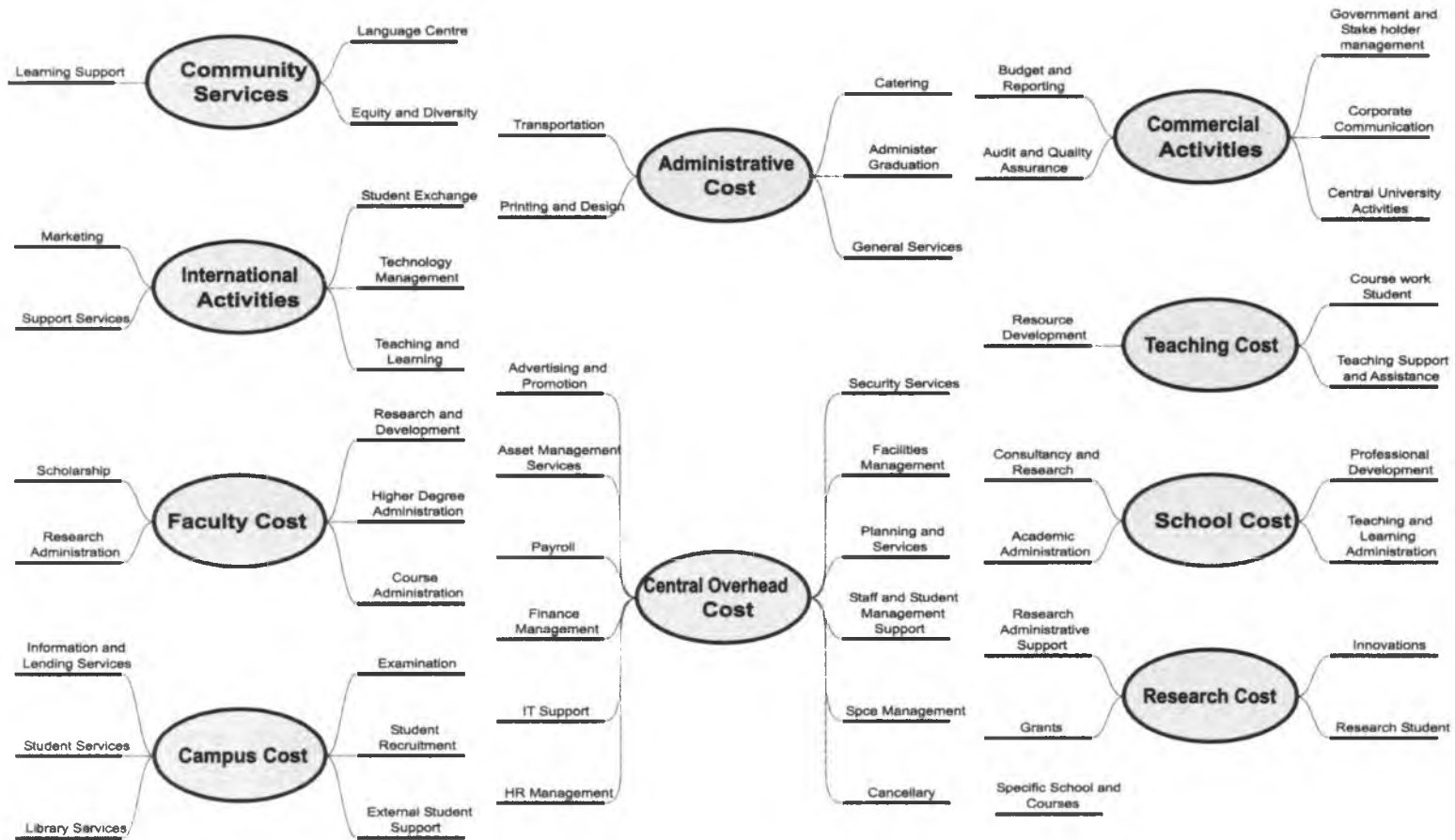


Figure 1: ABC Cost Drivers and Pools

the author believes that the developed model may initially be tested in the implementation of ABC by an individual university in Australia in order to prepare its own model to suit its particular needs.

Problems and Benefits

Respondents were also asked a series of open-ended questions to elicit their opinions on the problems and benefits of ABC implementation at university level. A summary of the problems expressed by them is as follows:

- Gaining a full understanding of the ABC concept by stakeholders
- Strong cultural and philosophical traditions within the university sector
- Liability of the finance department to communicate the real benefits of ABC (potential qualitative as well as financial benefits)
- Complexity in data collection
- Administratively very burdensome in an academic environment where no time sheet is maintained.
- Lack of any detailed costing process and better understanding of cost drivers and cost pools and their linkage with revenue and expenditure
- Encouraging the staff to participate in the process
- Staff resistance to measuring outputs
- Lack of willingness in the staff to use the results in managing the business of the university
- Cost of implementation and lack of cooperation from the staff
- Communicating and understanding ABC and its potential benefit to the university
- Reliable information as to the basis for allocation of direct and overhead costs
- Data collection is not often user-friendly
- Information often kept at school level on spreadsheets is not openly submitted or sometimes submitted incompletely.
- Education across the university and ownership by the university wide.
- Suspicion among the academic staff about the motives behind introducing ABC.
- Lack of understanding of the output from ABC
- Internal political influences
- Confidence within the university
- Students' information system is not able to produce the required level of details
- Time-consuming and tends to use proxy drivers
- Lack of gaining acceptance of costing academic activities, to determine profitability from the academic activities and the assignment of academic staff report.
- Construction of the finance system and the ability to extract accurate cost pools for ABC allocation

- Politics relating to funding distributions

A summary of the benefits listed by the respondents is given below:

- Effectively allocates resources for the generation of certain outcomes and objectives.
- Outputs can be used to develop models for the assessment of the new proposals
- Benchmarking to drive out further efficiency
- Strategies resulting in different outcomes ie more robust decisions rather than decisions based on personal biases and preferences
- Improves costing information leading to improved strategic management decisions
- Cultural understanding
- Greater understanding of cost drivers
- The management can be better guided on efficient and profitable areas
- The management can be helped to identify the cost drivers that affect profitability
- Confidence in being able to identify non-efficient areas and strategically deal with those areas
- May lead to reduction in unprofitable courses by identifying the cost of each course
- Powerful management tool for rationalisation of the courses offered and more effective use of funds
- Would provide additional data for consideration of the budget process
- Provides useful data for an analysis of the course or unit contributions
- More effective and efficient methodology for overhead allocation and for a reduced budgeting process
- Improves the core system to be able to deliver appropriate information about informed decision-making
- Increasing initial data capture and more detailed planning
- Enables to approach funding bodies for more funding with solid data
- Provides transparency and fact-based decisions
- Great tool for the financial viability of problems
- Understanding the true cost of activities of administration and the cost of research, and
- Enables to assess the viability of the faculties, schools and new programmes

Summary of Conclusions, Limitations and Implications

The results indicate that Australian universities appear to have adopted a strategic environmental posture to implement ABC as nine out of the twenty-one surveyed universities have already implemented ABC and eight are planning to implement it in near future. Four universities have the intention to implement it if funds are

available from the government and other sources. The statistical results show that the chief financial accounts officers and other management accountants believe that ABC is a strategic cost management system and if it is used in strategic planning by an individual university. ABC is likely to be implemented (refer to Table 2). However, the responses reveal that organisational factors like top management support, internal champion support and other staff support are very important for ABC implementation. Internal champion support means a champion like chief executive officer and chief financial officer will educate senior managers and users about ABC and create awareness for the organisation (Premkumar and Porter, 1995). ABC is a bigger project, so a champion is needed to drive the project and to facilitate communication within a university (Shields 1995, Foster and Swenson 1997). This issue has been explored to information system implementation (Prescott and Conger, 1995) and the findings of champion support will be positively associated with the implementation of ABC.

The questionnaire response rate was 100 per cent from the agreed participants, while 56 per cent of the universities participated. Five independent variables of activity-based costing implementation, as tested in hypothesis one, are correlated. The correlation reflects that the joint contribution of all five independent variables predicted ABC as a strategic cost management system for strategic planning and decision-making by the universities. Although the ABC approach may overcome some of the problems of overhead allocation and improve the economic efficiency of organizations, there are significant problems with its practical application and data collection reliability.

The findings relating to ABC implementation have implications for the top managements, practitioners, academicians and scholars of the universities in Australia. ABC as a strategic cost management system will help the universities in their strategic planning and decision-making in a growing competitive situation. If ABC is adopted it will improve resource allocation, reduce expenses and improve budget surplus. It is recommended that the management of an individual university should adopt the generic model of cost drivers and cost pools developed by the present writer (see Figure 1) in implementing ABC and prepare a tailor-made model to suit its individual need.

Glossary of the Terms Used

Activity-based costing (ABC) – A product or a service costing system that allocates overhead costs first to activities and then to products or services based on each product/service's use of activities to measure the cost of cost objects and the performance of activities.

Activities—An activity is a unit of work performed within an organisation. For example, activities in a university are course designing, lecturing, selecting course materials, grading papers, office hours etc.

Cost/ activity driver—An activity which drives or causes cost to cost object and is used to estimate the cost of an activity consumed by the cost object. For example, if the cost of a single course is the cost object, the cost driver is the cost per student.

Cost pool—A collection of total costs that are to be allocated to cost objects. For

example, in a university costs of library services, technology services, student services, research administration, course administration, human resource management etc.

Strategic cost management— It involves a detailed cost analysis of products, services, customers, suppliers, competitors, and the strategy-oriented performance measurement system including Kaplan and Norton's (1992) balanced scorecard (BSC).

Balanced score card— BSC consists of a set of superior combinations of both financial and non-financial measures reflecting four perspectives, *ie* financial, customer, internal business process, and learning and growth perspectives.

Strategic planning—It is the process for setting long-term goals and strategies for the organisation and includes types of business, markets, and financing of business.

Value added activity—An activity that provides essential value to the customer or is essential for the functioning of a business, for example, in a university what value is added with quality education to the students and quality research output to the community at large.

Value creation—An activity analysis method that classifies as value added or non-value added and ends with providing products or services that create value for the customers and stakeholders.

References

- Kaplan, R.S. and D.P. Norton (1992), "The Balanced Scorecard- Measures that drive Performance," *Harvard Business Review*, Vol.70, No.1, pp. 71-79.
- Heaney, Michael, "Easy as Abc? Activity-Based Costing in Oxford University Library Services," *The Bottom Line*, 2004, 17, 3; *Abi/Inform Global*, p. 93.
- Wang, Pingxin, Qinglu Jin and Thomas W Lin, "How an Abc Study Helped a China State-Owned Company Stay Competitive," *Cost Management*; Nov/Dec 2005; 19, 6; *Abi/Inform Global*, p. 39.
- Ellis-Newman, J, H Izan and P Robinson, "Costing Support Services in Universities: An Application of Activity-Based Costing," *Journal of Institutional Research in Australia*, 1996, aaair.org.au
- Sharma, R and J Ratnatunga, "Traditional and Activity Based Costing Systems," *Accounting Education*, London, 1997, Vol 6; No. 4, pp 337-345, ISSN 0963-9284.
- Partridge, M. and L Perren, "An Integrated Framework for Activity-Based Decision-Making," *Management Decision*, 1998, Vol 36; No. 9/10, pp 580-588, ISSN 0025-1747
- Heskin, K. and R Sharma, "Activity Based Costing in an Australian University: A Pilot of Social and Behavioural Sciences," *Journal of Institutional Research*, 2001, Vol 10; Part 1, pp 56-62, ISSN 1443-2110
- Sharma, Raj, "Program and Graduate Cost Model: An Australian Case Study," *Australasian Association for Institutional Research*. Vol. 4, No. 1; May 1995.
- Juan, N. Alejandro, "Utilising an Activity Based Approach for Estimating the Costs of College and University Academic Program," *Doctor of Education Thesis*, Baylor University, USA, August 2000.
- Trevor, Gerdson, *Activity Based Costing as a Performance Tool for Library and Information Technology Services*, Forth Northumbria, Information and Education Services Division, The University of Newcastle, Australia. [Accessed electronically]
- Andrew Goddard, Kean ooi, "Activity Based Costing and Central Overhead Cost Allocation in Universities: A Case Study," *Public Money & Management*, Vol.18, Issue 3, P. 31, Oxford, Jul-Sep, 1998.
- Kober, R., P. Brown, H. Izan, & P. Robinson, "Costing Human Resource Services in an Australian University: An Application of Activity Based Costing," Working Paper 97-72, Department of Accounting, University of Western Australia, December, 1996

- Doyle, K, "Some Pioneering Studies of Student Costs Using the New Activity-Based Costing Methodology." *Journal of Institutional Research in Australasia*, Vol. 3(2):40-54, September, 1994.
- Rumble, G, *Activity Costing in Mixed Mode Institutions: A Report Based on Deakin University*, Deakin University, 1989
- Deacon, G and R Huntington, "Organisational Change at The University of Melbourne – Eighteen Months On," *Journal of Tertiary Education Administration*, October: pp. 173-90, 1987.
- Izan, HY, R Kober and P Robinson, "Costing Human Resource Services in an Australian University: An Application of the Activity-Based Costing Methodology", working paper. Perth, The University of Western Australia, March, 1995.
- Cropper, P and R. Cook, "Activity-Based Costing in Universities - Five Years On," *Public Money & Management*, 20(2): 61-68, 2000.
- Colleen, Leavitt Cook, "Activity Based Costing at Washington State University: A Comparative Cost Study of Three Distance Education Delivery Modes," PhD Thesis, College of Education, Washington State University, May 2003.
- Booth, P. and F Giacobbe, "Activity-Based Costing in Australia Manufacturing Firms: Key Survey Findings," *Management Accounting Issues Report* by the Management Accounting Centre of Excellence of ASCPA, No.5, pp.1-6, March 1997.
- Ernst & Young, *Issues Report: On Costing within Australian Higher Education Institutions*, September, DETYA, Canberra, 1998
- Ernst & Young, *A Study to Develop a Costing Methodology for the Australian Higher Education Sector: Final Report*, May, DETYA, Canberra, 2000
- Ellis-Newman, J. & P. Robinson, "The Cost of Library Services: Activity-based Costing in an Australian Academic Library," *The Journal of Academic Librarianship*, September, pp. 373-379, 1998.
- Ernst & Young, *Costing Methodology: For Use within Australian Higher Education Institutions*, September, DETYA, Canberra, 1998.
- Johnson, H. T. and R. S. Kaplan, *Relevance Lost: The Rise and Fall of Management Accounting*, Boston, Mass: Havard University Press, 1987.
- Department of Employment, Education and Training, *Accounting in Higher Education: Report of the Review of the Accounting Discipline in Higher Education*, AGPS, Canberra, 1991.
- Department of Employment, Education and Training, *National Report on Australia's Higher Education Sector*, AGPS, June 1993.
- Sharman, R, "Resource Planning of Non-Academic Units within Higher Education Institutions," *Journal of Tertiary Education Administration*, pp. 19-36, May 1989.
- Zaman, M (1997), Implementation of ABC in some Australian Manufacturing, *CIMA in Focus*, August/September pp. 6-8.
- Langfield-Smith, Kim Thorne Helen and Ronald W. Hilton (2006), *Management Accounting: Information for Managing and Creating Value*, (4th Edition), NSW, McGraw-Hill Book Company.
- Langfield-Smith, Kim, Thorne Helen, Ronald W. Hilton (2003), *Management Accounting: An Australian Perspective*, (3rd Edition), NSW, McGraw-Hill Book Company.
- Langfield-Smith, Kim, Thorne Helen, Ronald W. Hilton (2000), *Management Accounting: An Australian Perspective*, (2nd Edition), NSW, McGraw-Hill Book Company.
- Premkumar, G. and M. Potter (1995), "Adoption of computer aided software engineering (CASE) technology, An Innovation Adoption Perspective," *DATA BASE Advances* 26, pp.105-124.
- Brown, David, Booth A Peter, and Giacobbe Francisco (2004), "Technological and organisational influences on the adoption of activity-based costing in Australia," *Accounting and Finance* 44, pp.329-356.

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List of all the Australian Universities (Sample)

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The University of Adelaide	Adelaide	www.adelaide.edu.au
Australian Catholic University	ACU National	www.acu.edu.au
The Australian National University	ANU	www.anu.edu.au
University of Ballarat	UB	www.ballarat.edu.au
Bond University	Bond	www.bond.edu.au
University of Canberra	UC	www.canberra.edu.au
Central Queensland University	CQU	www.cqu.edu.au
Charles Darwin University	CDU	www.cdu.edu.au
Charles Sturt University	CSU	www.csu.edu.au
Curtin University of Technology	Curtin	www.curtin.edu.au
Deakin University	Deakin	www.deakin.edu.au
Edith Cowan University	ECU	www.ecu.edu.au
Flinders University	Flinders	www.flinders.edu.au
Griffith University	Griffith	www.griffith.edu.au
James Cook University	JCU	www.jcu.edu.au
La Trobe University	La Trobe	www.latrobe.edu.au
Macquarie University	Macquarie	www.mq.edu.au
The University of Melbourne	Melbourne	www.unimelb.edu.au
Monash University	Monash	www.monash.edu.au
Murdoch University	Murdoch	www.murdoch.edu.au
The University of New England	UNE	www.une.edu.au
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The University of Newcastle	UoN	www.newcastle.edu.au
The University of Queensland	UQ	www.uq.edu.au
Queensland University of Technology	QUT	www.qut.edu.au
RMIT University	RMIT	www.rmit.edu.au
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Swinburne University of Technology	Swinburne	www.swin.edu.au
The University of Sydney	Sydney	www.usyd.edu.au
University of Tasmania	UTAS	www.utas.edu.au
University of Technology Sydney	UTS	www.uts.edu.au
Victoria University	VU	www.vu.edu.au
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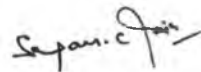
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