ACTIVITY BASED COSTING APPROACH TO FINANCIAL MANAGEMENT IN THE PUBLIC SECTOR: THE SOUTH AFRICA EXPERIENCE

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Abstract

After 1994, the newly elected democratic government of South Africa radically reformed its public sector. One of the most important reforms is the introduction of the Public Finance Management Act 1999 (PMFA) aimed at improving financial management in the public sector. The study investigates the impact and possible concomitant improvement in financial performance consequent upon the use of activity based costing (ABC) and the conditions under which such improvement is achievable in the South African public sector. The case study method was employed to collect and analyse data relating to improvement in financial performance, perception and success of ABC in the Buffalo City Municipality in the Eastern Cape Province of South Africa. The study reveals that ABC provides significantly more accurate and useful information than traditional cost accounting. The results indicated further that management strongly agree that ABC utilisation improves insight into causes of cost; provides better cost control and cost management; provide better understanding of cost reduction opportunities; improves managerial decision making; and provides more accurate information for product or service costing and pricing. Management also agrees that ABC use improves financial performance. The study is significant because it highlights the important role that ABC plays in improving financial management in the public sector. ABC use can be recommended for public sector organisations to provide decision makers (e.g. legislators, public officials and administrators) with valuable information and cost data. The cost data can be significant because they will give decision makers the opportunity to make optimal choices about how to allocate limited resources. Finally, ABC data will enable decision makers to streamline and restructure public entity operations and processes to ensure effectiveness and efficiency.

Keywords: Activity based costing, financial management, public sector, South Africa

Introduction

Background

After the abolition of apartheid in 1994, the newly elected democratic government of South Africa radically reformed its public sector. The reforms involved a shift from the apartheid-driven bureaucracy to a more democratic public service which puts the needs of the people first (Fraser-Moleketi and Salojee, 2008). The public sector encompasses national, provincial and local government entities which are charged with providing essential goods and services (such as education, healthcare, sanitation, and housing, among others) to the community at minimal cost. The pressure to initiate public sector reforms in South Africa emanated from two major sources: 1) the new political dispensation and 2) global public sector reform movement (Bardill, 2000, cited in Cameron, 2009). The primary objective of the reforms was to improve *inter alia* efficiency, effectiveness and accountability in all public sector organisations (PSO) including municipalities.

Previous research has suggested that public sector entities worldwide are faced with three major challenges relating to public service outcomes. These are: i) the need to improve effectiveness – linking resource inputs with outputs; ii) the need to improve efficiency – managing costs; and iii) the need to improve accountability – linking budgets with performance (Melese, Blandin, and O'Keefe, 2004). Other studies have shown that a strong public financial management is essential for improving the quality of public service outcomes, because it affects how funding is used to address national and local priories, the availability of resources for investment and the cost-effectiveness of public services (Pretorius and Pretorius, 2009; Bekker, 2009; ACCA, 2010). The ACCA (2010) study noted that the general public is more likely to have a greater trust in PSOs if there is a strong financial stewardship, accountability and transparency in the use of public funds. It argued further that strong financial management is vital for PSOs because it impacts on four broad areas, namely:

- Aggregate financial management – fiscal sustainability, resource mobilisation and allocation.
- Operational management – performance, value-for-money and budget management
- Governance – transparency and accountability
- Fiduciary risk management – controls, compliance and oversight

The Public Finance Management Act No.1 of 1999 (PFMA) has been a major positive milestone for South Africa's public finances. It is a robust and internally consistent legislative framework, and contains all the key elements of a good public finance management system. It

is a major positive development in promoting fiscal discipline and in ensuring improved service delivery in South Africa (Fourier, 2006). The main objectives of the new legislation are to: 1) modernise the system of financial management in the public sector (moving from cash accounting to accrual accounting); 2) enable public sector managers to manage, but at the same time be held more accountable; 3) ensure the timely provision of quality information; and 4) eliminate the waste and corruption in the use of public assets. The PFMA approach to financial management is based on managing for results rather than managing for compliance to ensure greater efficiency and accountability in the use of scarce resources. In his paper "Good Governance in ensuring sound public financial management", Professor David Fourier, of the University of Pretoria listed a number of characteristics of the PFMA (Fourier, 2006):

- Accounting officers (Departmental Heads) enter into employment contracts with executive authorities supported by performance agreements that include performance standards;
- Clearly defined responsibility of the accounting officer and other role players for resources committed and outputs produced;
- Greater alignment of planning and budgeting processes;
- Strategic planning
- Central regulations are reduced to the minimum and replaced with guidelines;
- Accounting officers are allowed flexibility in the use of resources;
- Management accounting and reporting;
- Appropriate internal control and risk management principles are followed; and
- Accounting practices similar to that employed in the private sector are being followed (i.e. accrual accounting, capitalisation of fixed assets and depreciation).

The National Treasury defines financial management as comprising all decisions and activities of management, as guided by a chief financial officer, that impact on the control and utilisation of limited financial resources entrusted to achieve specified and agreed strategic outputs. The definition highlights the interrelationships of management decisions, activities, use of resources and the achievement of strategic objectives (outputs). As explained by Pretorius and Pretorius (2009), public sector financial management is concerned not only with technical accounting and reporting, but also the overall taxing, spending and debt management of government which in turn influences resource allocation and income distribution. Financial management in the public sector encompasses a number of functions,

including cash management, planning and control of capital expenditure, working capital management, interaction with the Treasury, funding and performance decisions, among others. The National Treasury's in its *Normative Measures for Financial Management* sets out a number of performance requirements for the public sector. These include:

- Financial resources must be optimally planned and allocated between required outputs.
- The optimal investment in total assets required to support specified departmental outputs must be quantified and economically funded.
- The use of financial resources to achieve specified outputs must be monitored and controlled against the strategic and operational plans of the department by means of quantitative and qualitative data.
- Internal controls must be designed, implemented and maintained to ensure that:
  - Transactions are executed in accordance with management's general or specific authorisation
  - All transactions are promptly recorded at the correct amount, in the appropriate account, in the correct accounting period to which it relates and in accordance with the departments' accounting policies;
  - Access to assets is permitted only in accordance with management's authorisation;
  - Recorded assets are compared with existing assets and vice versa at reasonable intervals and appropriate action is taken with regard to any variances.
  - Accountability must be established for performance associated with the freedom to consume scarce financial resources in the delivery of specified outputs.

These requirements have had two implications: 1) the need for more sophisticated and higher-calibre financial systems and specialist finance staff in public sector entities and 2) the need for general managers and service professionals in public sector entities to have a good grasp of financial accounting, costing and financial issues.

Role of costing systems in financial management

In the private sector cost is recognised as a critical concept because it is used to determine profit which is their primary objective. In PSOs, however, cost has limited use because profitability is not the goal of their operations. Nevertheless, it is still important for several reasons. First, many PSOs provide goods and services that can be exchanged in the market. For example, garbage collection, water and sewerage treatments and supply, and other utility supplies. The production of these goods and services requires a breakeven (where

revenue = total cost) and the production is inefficient and not viable if breakeven is not achieved. Second, cost provides a measure of efficiency. In other words, how well a resource is spent to produce a product or service? Cost helps managers determine whether the use of a resource is maximised and waste is avoided. Cost also interests stakeholders such as elected officials and private citizens who pay for services. Third, the increasing use of performance-based budgeting requires the availability of performance measures including cost measures. In a performance-based budgeting, decision makers use cost information to assess a program's efficiency and make resource allocation decisions. Finally, cost information is a useful standard in making privatisation or outsourcing decisions. Proponents of privatisation have cited the cases of inefficient operations in the PSO in their argument for contracting out public services to the private sector. They claim that a service should be produced by a sector that is more efficient in using resources. Therefore, the selection of service providers should be based partly on costs (Wang, 2010).

Two main costing techniques are used for analysing and understanding costs: 1) traditional cost accounting and 2) activity based costing (ABC). Traditional costing systems are based on the assumption that products drive cost directly. These systems break costs into direct and indirect costs (overhead) and allocate the indirect costs to products or services arbitrarily using volume-related bases such as direct labour or machine hours. As a result, product cost distortion occurs. One of the main weaknesses of traditional costing systems is that they tend to hide the actual cost of a product or a service. This prevents managers from identifying, understanding, and reacting to costs that they should be managing. Activity Based Costing (ABC) was introduced by Cooper and Kaplan as an alternative to traditional costing systems (Cooper and Kaplan, 1988) to improve the accuracy of product costs. In product costing, ABC allows costs to be apportioned to products by the actual activities and resources consumed in producing, marketing, selling, delivering and after sales services of the product.

The underlying concept of ABC is that businesses are made up of systems that are subdivided into processes and processes are made up of a series of interrelated activities. The activities can be divided into sub-activities or tasks which will be performed by individuals or groups of people. For example, the purchasing activity might involve two sub-activities such as ordering and receiving products. ABC assumes further that processes and activities within an organisation add value to outputs and that outputs consume activities which in turn consume resources (Olsen, 1998). Consequently, costs are assigned from resources to activities and from activities to outputs. Thus to reduce costs and increase value of outputs,

activities rather than outputs must be managed. The goal of activity based costing information system, therefore, is to accurately identify and measure the relationship between resources and activities and between outputs and activities. By identifying the causal relationship between costs and activities, ABC can be used to reliably link an organisation's operational performance to its actual financial performance. This link is vital for public sector organisations because they usually determine future costs based on budgeted volume of activities. In addition, ABC can reveal how well an organisation's activities align with its strategic goals and objectives (Canby, 1995).

Buttross and Schmelzle (2003) stress that applying ABC to the public sector can provide information on the cost of providing government services for strategic decisions, such as determining the affordability of providing government services (such as rubbish collection); setting user fees for water and waste water services); and determining whether to outsource government services. Narayanan (2003) argued that costs are not incurred only as a consequence of productive activities but also as a consequence of supporting activities. ABC is therefore capable of assisting public sector organisations make the right decisions and take action to improve financial performance. Cooper and Kaplan (1998) noted that "service companies are ideal candidates for ABC, even more than manufacturing companies. This is because most of the costs in service organisations are fixed and indirect. In contrast most costs in manufacturing enterprises can be traced to individual products; therefore indirect costs are likely to be a much smaller proportion of total product costs". Other studies (Kaplan and Cooper, 1998; Drury and Tayles, 2000), have established that an increasing number of service organisations in the private sector have adopted ABC to improve financial management in their entities. In contrast, there has not been a widespread adoption of this costing methodology in the public sector (Bagur *et al*. 2006).

The CIMA Official Terminology (2005) defined ABC as "an approach to the costing and monitoring of activities which involves tracing resource consumption and costing final output. Resources are assigned to activities, and activities to cost objects based on consumption estimates. The latter utilises cost drivers to attach activity costs to cost outputs". Thus, ABC recognizes the causal relationships of cost drivers to activities (Holst and Savage, 1999). ABC was initially designed as a method of cost calculation, but it also provides management information. It enables the management to see where the most important costs occur as well as what produces them (Gunasekaran, Marri and Yusuf, 1999). Evans and Bellamy (1995) suggest that since ABC reveals the link between performing activities and the consumption of an organisation's resources, it gives a clear picture of how products,

customers, brands or distribution channels both generate and consume resources. It is important to note that ABC focuses on activities which are the major tasks performed in an organisation. In manufacturing firms, there are typically four levels of activities namely, unit and batch levels – and product and facility sustaining (Shanahan, 1993). Unit level activities are performed every time a unit is produced; batch level for every batch; product sustaining activities support the production of the product and facility level activities support the production site. ABC uses the cost of these activities as the basis for assigning costs to cost objects. The distinctive feature of ABC is that it focuses on activities, whereas traditional costing focuses on the product or service. Under traditional costing the assumption is made that products/services consume resources (Hansen and Mowen, 2005). Under ABC, products/services consume activities and activities consume resources. Typical examples of resources are labour, materials, rent, depreciation, power, travel and entertainment, insurance, supplies and repairs and maintenance. A resource driver measures the amount of resources used by an activity. Examples include the number of cubic metres for space and number of employees for salaries and wages.

Problem statement and research questions

Problem statement

The South African public sector has undergone profound transformation in the past decade. A major feature of this change has been the abolition of the 'old style' public administration and the introduction of a 'new public management' system which focuses on results and measurement and in which accounting has a central role. This shift in emphasis has brought the notion of accountability, effectiveness and efficiency (Value-for Money) to the fore. Argued to be superior to the traditional volume-based costing method, ABC is considered by practitioners and researchers as an important strategic tool to aid mangers for better decision making. More importantly, ABC helps eliminate non-value added activities that consume an organization's resources without any benefit for the organisation (Krishnan, 2006). Given the above background, the primary problem addressed in this study is, ***whether ABC provides significantly more accurate and useful cost information than the traditional cost accounting system in the South African public sector.***

Research questions

The following secondary questions are designed to answer the primary question:

- How has ABC been applied to public sector entities in South Africa?
- What is the association between ABC and key financial indicators?
- Under what conditions will ABC lead to improvement in organisational performance?
- What is management's perception of ABC's role in financial management?

Aim of the study

The overall aim of this study is to investigate the impact and possible concomitant improvement in financial performance consequent upon the use of activity based costing (ABC) and the conditions under which such improvement is achievable in the South African public sector.

Objectives of the study

The objectives of this study are:

(i) To identify critical success factors influencing ABC implementation in the public sector

(ii) To measure the relationship between ABC information and key financial indicators

(iii) To ascertain management's perception of ABC

(iv) To compare and contrast ABC with traditional costing accounting

Hypotheses

The above objectives can be achieved by testing the following hypotheses:

- There is no difference in financial performance prior to and after the implementation of ABC.
- There is no correlation between management's perception and financial performance.

Implementation of ABC at Buffalo City Municipality (BCM)

Background to BCM

Buffalo City Municipality is located in the Eastern Cape Province, the second largest province in terms of land area in South Africa. BCM is a category B municipality and was established in the year 2000 in terms of the Municipal Structures Act (117 of 1998). BCM is composed of East London, Bhisho and King William's Town, as well as Mdantsane and Zwelitsha townships. It covers approximately 2515 km^2, with 68km of coastline. It has a population of approximately 800 000 people that includes over 190 000 households (BCM Annual Report 2006/7). Of this, 60% reside in the East London area, 20% in the King

William's Town area and the remaining 20% are located in the rural areas. In terms of the population statistics, 82% of the population is African, 10% are Whites, 6% are Coloureds and 2% are Asians. The area has industry based primarily in the auto and associated industries as well as textile and pharmaceutical industries. BCM is characterized by a high rural population, high proportion of poorly paid employees and a high unemployment rate. Consequently, the GDP is substantially lower than the national average (UNDP, 2006).

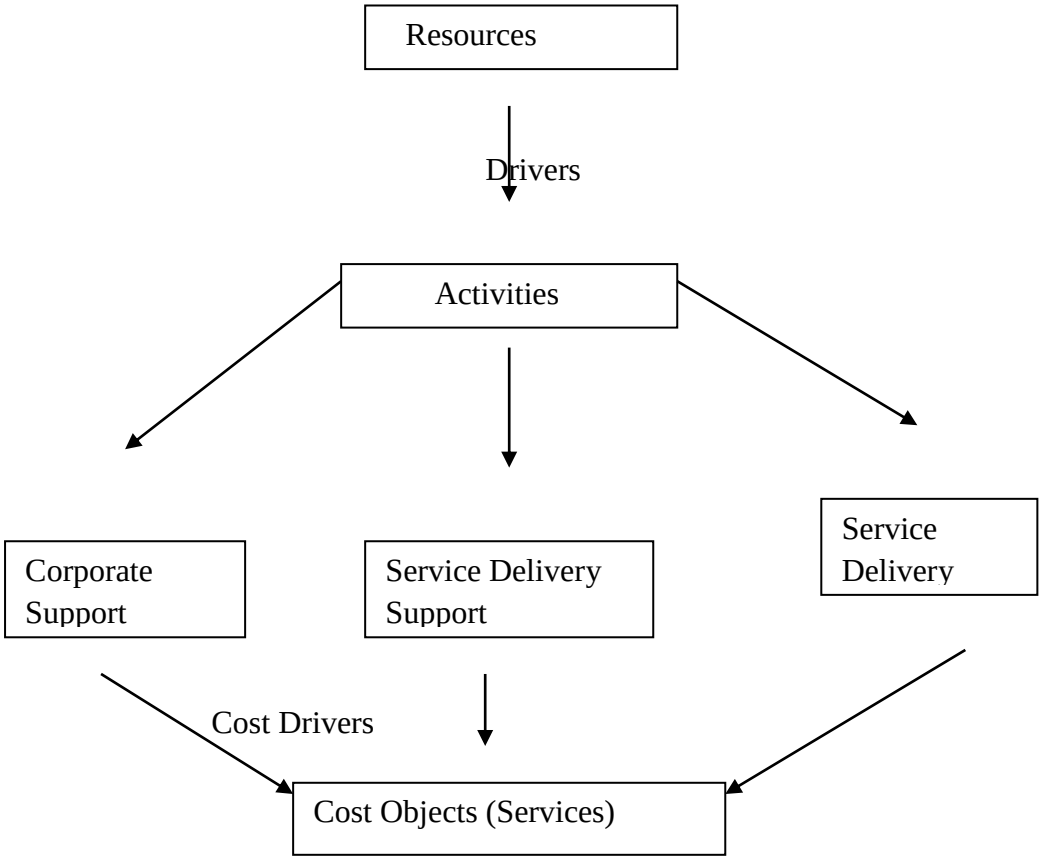
ABC model for municipalities

The South African National Treasury outlines an ABC model (figure 1) that is applicable to government entities such as municipalities. The model which apparently is based on the cost assignment view shows activities comprising support costs and external service delivery costs. There are two forms of support costs prevailing in local government - those that are incurred in the discharge of corporate overhead activities and those that are incurred in supporting the delivery of external services. Cost drivers are employed to allocate support costs to external service delivery functions. External service delivery costs are directly allocated to the respective external service delivery functions. In addition, the ABC process is able to provide the necessary information to calculate unit costs for the different cost components of tasks performed on a unique job basis.

ABC Implementation

The implementation of ABC at BCM forms part of the National Treasury's budget reform process in the municipality (Hofert, 2005). The actual implementation, which comprises four phases, was facilitated by Global Technology Business Intelligence (GBI), a Johannesburg based business consulting firm. Phase one covered an initial period of four months and ended on 8 September 2004. The ABC methodology idea was introduced to all departmental heads, for them to understand what it meant and what the benefits were to each departmental head. Workshops were organised to educate them on how to use the information and to apply it to their daily operational activities. In order to encourage the use of ABC information in organisational reporting and behaviour, frequent references were made to ABC results when making decisions, whether financial, operational, or human resource-related (Hofert, 2005).

Figure 1: Basic elements of a local government ABC model



Source: **South Africa National Treasury (2004).**

Hofert stated further that, "a set of management accounts was created with the 2003/2004 financial year's results and the activity-based management accounts were distributed in paper base and electronically via the web." He stressed that this information provides a high-level overview of BCM of the top ten most expensive activities, which users can devolve to directorate and department al levels and finally to the activities producing the high costs. The type of information that was made available to all departments through the system include: i) the true cost per kilowatt-hour of delivering electricity to the city; 2) the true cost of purifying a kilolitre of water versus making purchases from water authorities; 3) the cost of performing a burial, exhumation or cremation; 4) the cost of providing fire service protection per household; and 5) the true cost of providing a sewerage service per household. Phase two commenced in October 2004 and was completed in April 2005. It involved the costing of the major "Big 5" services: water, electricity, fire, refuse removal and sewerage at the same level as the tariff book. It was expected that this will reveal profitability per service (analysed by component of the service listed i.e. profitability per business, industrial and domestic consumers for water, electricity etc.). The ultimate goal was to measure BCM against other cities in South Africa once they have implemented ABC, and to provide answer

to questions such as: 1) why is it cheaper to purify water in, for example, Cape Town than in East London?, and 2) does Cape Town Municipality use better methods that BCM can learn from? Phase three encompasses the linking of ABC methodologies and results to predictive planning to assist advanced budgeting. Hofert asserted that "budgeting via the web, where users can enter their financial and non-financial data will give users a global figure and allow them to perform "what-if" scenarios online. Further, once they have completed the data entry, they will be able to sign off their data digitally, which will be ready for the budget office to consolidate" (Hofert, 2005). Phase four**,** the final phase, involves integration of ABC with budgeting and with performance management. This was aimed at assisting the municipality to answer questions such as: i) what is BCM's capacity to perform an activity? 2) Should the municipality be providing 100 mega-litres per day when its capacity is 130 mega-litres? 3) What is the cost of this lost capacity? Can the budget be reduced by this capacity and is the department performing optimally?

Literature review

ABC has emerged as a modern cost accounting and management innovation that can be used to link an organisation's operational performance and actual financial performance (Paduano, 2001; Cagwin and Bouwman, 2000). Canby (1995) argues that ABC systems can reveal how an organisation's activities align with its strategic goals and objectives. The theories of innovation (Kwon and Zmud, 1987), transactions cost economics (Roberts and Sylvester, 1996), and information technology (Dixon, 1996) claim that organisations tend to adopt innovations such as ABC to obtain benefits that directly or indirectly impact financial performance measures. For example, Cagwin and Bouwman (2000) studied the impact of ABC on 205 large companies in the USA and found a significant relationship between ABC and financial performance as measured by 3 and 5-year return on investment. Kaplan (1994) reports that in the early 1980 ABC was being used in the service sector by logistics companies, bank, and hospitals and had already developed costing models similar to ABC. King (1995) carried out studies on hospitals in the UK and concluded that the UK National Health Service can benefit from the implementation of ABC.

Brimson and Antos (1994) mentioned examples of US Public Sectors where ABC succeeded – telecommunications, parcel post companies, hospitals, electricity and gas companies. The authors noted that ABC helped these companies control their costs. Taba (2005) measured employees' perceptions of ABC implementation, the benefits of ABC implementation and the conditions that affect the potential benefits of ABC implementation at the South African Post Office. He found that technical factors such as training, high cots of

implementation, lack of software packages, the lack of data requirements and co-operation between departments were hindrances to the successful implementation of ABC. Vazakidis, Karagiannis and Tsialta (2010) investigated the relevance of ABC in the in the Greek public sector. Their findings revealed that when combined with new technologies and new methods of management, ABC can resolve all the deficiencies of the public sector and help produce services at minimal cost. Argyroupolis Municipality (2005) in Greece claims on its website that it has implemented ABC since 2005 to better monitor and control various elements of costs.

Shields (1995) found that success of ABC is influenced by behavioural and organisational variables, as opposed to technical variables. These variables comprise top management support, linkage of the ABC system to competitive strategies, linkage of the ABC system to performance evaluation and compensation, sufficient internal resources, training in designing and implementing ABC and non-accounting ownership, which is the commitment of non-accountants to use ABC information. Michela and Irvine (2005) investigated the effect of ABC on the efficiency in the UK health system. They found that several factors influence the successful implementation of ABC. These are top management support; corporate strategy; resources, the presence of a champion for ABC; external consultants; team size and heterogeneity; a competitive environment; training and interaction with existing systems. Waters, et al (2003) examine the application of ABC to calculate unit costs for a healthcare organisation in Peru. The results show that applying ABC to healthcare services in a developing country is feasible and potentially useful. The study observe further that applying ABC to healthcare services will reveal where an organisation is spending money, the difference between production costs and support costs and potential targets for efficiency improvement.

A common trend identified in the literature is that under appropriative "enabling conditions", ABC can provide organisations with improved cost information for improved decision-making and improved performance. The enabling conditions include top management support; linkage of the cost management system to competitive strategies; linkage of the cost management system to performance evaluation and compensation; sufficient internal resources; training in designing, implementing and using cost management systems; non-accounting ownership; and consensus about and clarity of the objectives of the cost management systems.

Methodology

The study was carried out as a case study, to find out how ABC suits the public sector. The case unit was the Buffalo City Municipality (BCM) in the Eastern Cape Province of South Africa. BCM was the first Municipality in South Africa to implement ABC. The purpose was also to investigate the possible concomitant improvement in financial performance consequent upon the use of activity based costing (ABC) and the conditions under which such improvement is achievable in the South African public sector. The research methodology of this case study is a combination of descriptive and quantitative analyses. The descriptive analyses include a study of BCM's annual reports, Integrated Development Plans (IDP), questionnaires and literature reviews. The quantitative analysis involves computation and analysis of key financial indicators such as current ratio, liquidity, debt management, gearing, among others, against targets. A questionnaire was sent to the finance department to get a consolidated response relating to ABC. The questionnaire contained 6 major items which served as the key for measuring management's perception of ABC.

Data collection and analysis

Data was collected using two main sources: document analysis and a structured questionnaire. Several key financial performance indicators (see tables 1 to 3 below) were analysed to determine the impact of the adoption of ABC on the Municipality's financial performance. A structured questionnaire containing six major items were arranged on a five point Likert type scale expressed as 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree was sent to the finance department for completion. The results are displayed on table 4.

Table 1: Income and Expenditure

Financial indicator	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total income (R mil.)	914	1024	1184	1546	1605	1744	2021	2172	2682
Total expenditure (R mil)	913	1021	1166	1366	1401	1671	1838	2367	2750
Surplus/(Deficit) (R mil)	1	3	18	180	204	73	3	(195)	(68)

Source: Buffalo Municipality, Integrated Development Plan Review 2005-2006. Audited Financial Statements

Table 2: Revenue management and liquidity

Financial indicator	2002	2003	2004	2005	2006	2007	2008	2009	2010
Annual debtors collection rate (%) (target = 97%)	81	93	92	96.05	93.5	93.6	94.6	-	93.5
Net debtors to annual	35	41	34	27.5	26.1	17.4	-	12.2	14.5

income (%) (Target <35%)									
Days debtors outstanding (days)	126	116	95	-	68	69	-	-	-
Current ratio (target =2:1)	1.84	1.72	2.16	-	2.26	2.68	1.87	2.27	1.45
Liquidity (target =1.5:1)	0.19	0.01	0.04	-	1.5	1.76	-	-	0.96
Efficiency (personnel costs to operating expenditure (%) (target <30%	37	35.3	35	33.0	32.1	30.0	30.0	-	-

Source: ***Buffalo Municipality, Integrated Development Plan Review 2005-2006; Annual Financial Statements. (-) = not available.***

Table 3: Borrowing Management

Financial indicator	**2002**	**2003**	**2004**	**2006**	**2007**	**2008**
Total debt to Total assets (%) (target <10%)	63	63	47	22.5	19.5	-
Interest bearing debt to total income (%)	51	47	41	26.6	31.9	28.7
Average interest paid on debt (%)	11	13	14	11.9	11.7	11.0
Capital charges to operating expenses (%) (target =16%)	17	14	13	9.3	11.0	9.0
Total debt to annual income (%) (target =35%)	76	41	34	26.1	31.9	28.7

Source: ***Buffalo Municipality, Integrated Development Plan Review 2005-2006; Annual Financial Statements*****. (-) = not available**

Table 4: Management's perception of ABC

Major attribute of ABC	Score
ABC improves insight into causes of cost	5
ABC provides better cost control and cost management	5
ABC provide better understanding of cost reduction opportunities	5
ABC improves managerial decision making	5
ABC provide more accurate information for product or service costing and pricing	5
ABC improves financial performance	4

Source: ***Author's analysis*** **(2011)**

Findings

The analysis revealed a positive improvement in the municipality's financial performance over the period 2004 to 2010. In table1, total income increased from R1184 m (2004) to R1605m in 2006, an increase of 35.6%. As a result, the surplus increased from R18m to R204m an increase of 10.3% over the same period. Table 2 shows that annual debtors' collection rate improved from 92% (2004) to 93.6% (2007). Net debtors to annual

income ratio improved from 35% (2002) to 26.1% in 2006. Similarly, days debtors outstanding have also shown a significant improvement, declining from 126 days (2002) to 69 days in 2007. The current ratio improved from 1.84 (2002) to 2.68 in 2007. Liquidity also showed a marked improvement, increasing from 0.19 (2002) to 1.76 in 2007. Table 3 shows that total debts to total assets declined from 63% (2002) to 19.5% (2007). Interest bearing debt to total income declined from 41% (2004) to 28.7% (2007). In the same period, average interest paid on debt dropped from 14% to 11.0%, while capital charges to operating expenses declined from 13% to 9.0%.

Table 4 shows management's perception of ABC usage and revealed that management strongly agree that ABC use: improves insight into causes of cost; provides better cost control and cost management; provide better understanding of cost reduction opportunities; improves managerial decision making; and provides more accurate information for product or service costing and pricing. It also agrees that ABC use improves financial performance. The following were identified as some of the benefits accruing to the municipality from the use of ABC: determination of true cost, revenue and profitability per service, per unit rate, among others; integrated budgeting with ABC has also led to visibility in cost drivers. ABC implementation has impacted not only on the decisions of the municipality but also benefited the local community in various ways, including re-allocation from expensive activities to perform better in other activities, budgeting using cost driver volumes as well as Rand values.

Conclusion

Based on the results and analysis, the study supports the premise that ABC is an effective means to obtain useful and comparable costing information. This in turn led to the perceived improvement in financial performance, cost information for decision making as well as service delivery in the public sector. Numerous factors were listed as contributing to the successful implementation of ABC at BCM - high capacity, external skills from private sector; grant funding from National Treasury, management willingness to participate.

References:

Association of Chartered Certified Accountants (ACCA) (2010). Improving public sector financial management in developing countries and emerging economies.

Bagur, L., Boned JL., and Tayles M. (2006). Cost System Design and Cost Management in the Spanish Public Sector, Paper in progress.

Bekker, HJ. (2009). Public Sector Governance – Accountability in the State. Paper for CIS Corporate Governance Conference, 10-11 September 2009.

Brimson, J.A. and Antos, J. (1994). Activity - Based Management for Service Industries, Government Entities and Non - Profit Organizations. 1st Edition., John Wiley and Sons, Inc.NY.

Buttross, T. & Schmelzle, G. (2003). Activity-Based Costing in the Public Sector. Encyclopaedia of Public Administration and Public Policy.

Cagwin, D. and Bouwman, M.J. (2000). The association between activity based costing and improvement in financial performance.

Cameron, R. (2009). New Public Management Reforms in the South African Public Service: 1999-2008. Paper presented at Political Studies Departmental seminar, UCT, 28 April 2009.

Canby, J. (1995). Applying activity-based costing to healthcare settings. *Healthcare Financial Management Association.*

Chartered Institute of Management Accountants (CIMA) (2005). Official Terminology.

Chartered Institute of Management Accountants (CIMA) (2001). Technical Briefing: *Developing and Promoting Strategy*, April 2001.

Cooper, R., Kaplan, R.S., (1988a). Measure costs right: Make the right decisions. Harvard Business Review 65 (5), 96–103.

Cooper, R., Kaplan, R.S., (1988b). How cost accounting distorts product cost. Management Accounting (April), 2002.

Cooper, R. and Kaplan, R. (1991). Profit Priorities from Activity-Based Costing. *Harvard Business Review*, May-June. p. 130.

Dixon, J. M. (1996). Total Quality Management in ISO-9000 Registered Organizations: An Empirical Examination of the Critical Characteristics Associated with Levels of Financial Performance. Dissertation: Florida State University.

Drury, C. (2004). Management and Cost Accounting, 5th edition, Thomson Publishing, London.

Drury, C, and Tayles, M. (2000). Cost systems design and profitability analysis in UK Companies,

London. Chartered Institute of Management Accountants.

Evans, P, and Bellamy, S. (1995). Performance evaluation in the Australian public sector: the role of management and cost accounting control systems. Int. J. Public Sector Management, 8: 30-38.

Fourier, D. (2006). Good Corporate Governance in Ensuring Sound Public Financial Management.

School of Public Management and Administration, University of Pretoria, South Africa.

Fraser-Moleketi, G and Saloojee, A. (2008). "South Africa's Public Service: Evolution and Future Perspective". Paper presented at the New World, New Society, New Administration conference in Canada.

Gunasekaran, A., Marri, H.B., and Yusuf, YY. (1999). Application of activity-based costing: some case experiences. Managerial Auditing Journal 14/6 [1999] 286-293. MCB University Press.

Hansen, D R., and Mowen, M. M. (2005). *Management Accounting* (7th ed.), South Western Publishing Co., Cincinnati, Ohio.

Hofert, A. (2005). Activity Based Costing – More than just a costing methodology for a City. *IMFO*

Vol. 5 No.3 Fall 2005.

Holst, R and Savage, R (1999). Tools and techniques for implementing ABM. In: Player St, Lacerda, R (eds). Arthur Anderson's global lesions in ABM. New York.

Kaplan, R.S. (1992). "In Defense of Activity-Based Cost Management," *Management Accounting 74*, No. 5 (November 1992): 58.

King, M. (1995). Activity Based Costing in Hospitals-A Case Study Investigation. CIMA Publishing, London, UK. ISBN: 10: 1874784256, pp: 66.

Krishnan, A (2006). An Application of Activity Based Costing in Higher Learning: A Local Case Study. Contemporary Management Research, 2 (2): 75-90.

Kwon, T.H., and Zmud, R.W. (1987). Unifying the fragmented Models of Information Systems and Implementation. In *Critical Issues in Information Systems Research*, edited by R.J. Boland and R. Hirscheim. New York: John Wiley & Sons.

Melese, F., Blandin, J. & O'Keele S. (2004). A New Management Model for Government: Integrating Activity Based Costing, the Balanced Scorecard and Total Quality Management with the Planning, Programming and Budgeting System. *International Public Management Review*. Vol. 5. Issue 2. pp.103-131

Michela, A, and Irvine, L (2005). Activity based costing in healthcare: a UK case study. International Society for Research in Healthcare Financial Management Ltd.

Miller, A.J. (1996), Activity Based Management in Daily Operation, John Wiley and Sons Ltd., Chichester.

Municipality of Argyroupolis, (2005). Activity based costing. Municipal Development Company of Argyroupolis.http://deada.gr/index.php?option=com_content&task=view& idItemid=74.

Narayanan, V. (2003). Activity Based Pricing in a Monopoly. Journal of Accounting Research. 41 (3): 473-502.

New Zealand Treasury (2004). *Improving Output Costing - Guidelines and Examples.*

South Africa Treasury. (2004). *Normative Measures for Financial Management (Phase I: Perfecting the Basics).*

Olsen, R. (1998). Activity-Based Costing: A Decision-Making Tool. The Manufacturing Report 1998 by Lionheart Publishing, Inc.

Paduano, R. (2001). Employing Activity Based Costing and Management Practices within the Aerospace Industry: Sustaining the Drive for Lean. Unpublished Master of Science Dissertation. Massachusetts Institute of Technology.

Pretorius, C. and Pretorius, N. (2008). Review of Public Financial Management Reform Literature.

London: DFID

Roberts, M. W. and Silvester, KJ (1996). Why ABC failed and how it may yet succeed. *Journal of Cost Management* (Winter): 23-35.

Shanahan, Y.P (1993) Activity Based Costing: Recent Advances. *Accountant's Journal*, 72, 6, 24-27

Shields, M.D. (1995). An Empirical analysis of firms' implementation experience with Activity Based Costing. *Journal of Management Accounting Research* (Fall): 148-166.

Taba, L.M. (2005). Measuring the successful implementation of Activity Based costing (ABC) in the South African Post Office. Unpublished Masters Thesis, University of South Africa.

Tsai, W.H. (1996), ``Activity-based costing model for joint products", International Journal of Computers and Industrial Engineering, Vol. 31 No. 3-4, pp. 725-9.

Turney, B.B.P. and Stratton, A.J. (1992), ``Using ABC to support continuous improvement", Management Accounting, September, pp. 46-50.

UNDP. (2006). The Buffalo Municipality. Review of the Duncan Village Waste Management and Recycling Project and its Relationship with the Integrated Development Plan (IDP).

Vazakidis, A., Karagiannis, I., and Tsialta, A. (2010). Activity-Based Costing in the Public Sector.

Journal of Social Sciences 6 (3): 376-382, 2010. ISSN 1549-3652. Science Publications

Wang, X.H. (2010). Financial management in the public sector: tools, applications and cases. Second edition. M.E. Sharpe Inc.

Waters H, Abdallah, H, Santillan D, and Richardson P (2003). Application of Activity Based-Costing (ABC) in a Peruvian NGO Health Care System. USAID.