

A case study of activity based costing



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BAYERO UNIVERSITY, KANO SCHOOL OF POSTGRADUATE STUDIES, FACULTY OF SOCIAL SCIENCES A case study of Activity Based Costing in Lagos State Healthcare By POPOOLA, OLUWATOYIN MUSEDIKU JOHNSON Course Facilitator: Professor Kabiru Isa Dandago Being a paper presented in the M. Sc. Accounting Programme, Department of Accounting, Bayero University, Kano-Nigeria December 15, 2009 Abstract The purpose of this study is to examine the healthcare systems, in particular the blood transfusion services in Lagos State Health Services.

The study revealed the challenges, the pitfalls and other associated problems of adopting a costing technology which significantly departs from previous practices. The research was based on a single embedded case study approach which analyses the organization under different perspectives, investigating reactions, behaviours and results in three subunits arising from the attempts at ABC implementation. The appropriateness of the method is unique as it differentiates this investigation from previous contributions to the ABC literature.

The conclusion delved on the implications for implementation of novel accounting techniques in healthcare settings. The study identified a number of factors which influences the implementation of ABC, such as, top management support, corporate strategy and services, the presence of a champion, external consultants, team size and heterogeneity, a competitive environment, training and interaction with existing systems and the four dimensions of significant influence which are: adoption, design, mplementation and use of information. The findings highlighted the progression from implementation of ABC to actual use which was also

influenced by the existence of a competitive environment and by effective interaction with existing information systems. 1. 0 Introduction 1. 1

Background In today's world, healthcare systems face pressures to deliver cost efficient care in the face of high demands. Based on these pressures, many initiatives to improve the management and efficiency of healthcare delivery were adopted.

This study examines the trajectory – from initial idea to implementation – of the adoption of activity based costing (ABC) with a view to improve the efficiency by one health care organization. The healthcare organization which is discussed in this paper is a blood transfusion service, part of the Lagos State Health Services. This study reveals the challenges, the pitfalls and the problems of adopting a costing technology that is significantly different from previous practices in a healthcare setting. . 2 Research

Context The Lagos State's blood transfusion service is currently organized into four centres for the collection and distribution of blood. The role of these centres in the healthcare system is crucial and their management is complex from the raw material procurement phase through to final use. The Lagos State's transfusion services rely on voluntary donors, most of who donate their blood up to two times a year.

Even though, this main input material is free, the costs of transfusion centres are significant as they manage many varied phases within a long supply chain: collection, processing, testing, delivery (on a daily basis) and clinical assistance. It is important to recall that since 1980, there has been an increase in costs within these services because of two major events: the

discovery of HIV and of Creutzfeldt-Jakob Disease (vCJD) – the human variant of Bovine Spongiform Encephalopathy (BSE).

These two events affected transfusion centres deeply and, therefore, put them at the centre of public controversy. In actual fact, the discovery of HIV altered the relationships of donors, transfusion centres and patients. This situation undoubtedly raised a sense of uncertainty in everyone – citizens, researchers, politicians, doctors – and the consequences for blood transfusion services were significant in many States of the Federation and countries around the world. It is because of the need for higher safety measures that brought about the high costs of transfusion at the centres.

Coupled to this, the services had to deal with a reduced number of eligible donors. The appearance of the human variant of the BSE affected the management of the Lagos State's transfusion service at another level: since 1998 they have been forbidden to use imported plasma and for the first time, these centers were obliged to buy a 'raw' material which was hitherto free. In line with this thought, management's focus on cost reduction and tighter cost control had become an important issue.

Several researchers have addressed this issue by looking at costs for specific processes (Sonnenberg et al. , 1999; Strauss, 2001; Amin et al. , 2003) or by surveying the costs incurred by the transfusion system (Varney & Guest, 2003; Syrjala et al. , 2001). This paper sits between these two strands by looking at the experience of a healthcare organization which has undertaken an overall project for implementing an innovative costing technique – activity

based costing – for the whole institution. 2. 0Literature Review 2. 1Activity Based Costing: Conceptual framework

ABC assigns manufacturing overhead costs to products in a more logical manner than the traditional approach of simply allocating costs on single volume measures such as direct labour hours, direct labour costs, or machine hours. Furthermore, ABC has grown in importance in recent times because manufacturing overhead costs have increased significantly, the manufacturing overhead costs no longer correlate with the productive machine hours or direct labour hours, the diversity of products and the diversity in customers' demands have grown, and some products are produced in large batches, while others are produced in small batches.

According to Horngren, Charles T. , Gary L. Sundem, and William O. Stratton (1999), many companies in both manufacturing and non-manufacturing industries, are adopting ABC systems for a variety of reasons: (1) margin accuracy for individual products and services, as well as customer classifications, is becoming increasingly difficult to achieve given that direct labor is rapidly being replaced with automated equipment. Accordingly, a company's shared costs (i. e. indirect costs) are becoming the most significant portion of total cost, (2) since the rapid pace of technological change continues to reduce product life cycles, companies do not have time to make price or cost adjustments once costing errors are detected, (3) companies with inaccurate cost measurements tend to lose bids due to over-costed products, incur hidden losses due to under-costed products, and fail to detect activities that are not cost-effective, and (4) since computer technology costs are decreasing, the price of developing and operating ABC

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systems also has decreased. . 2Activity Based Costing: Previous Studies

Activity Based Costing (ABC) has gained and secured a central role in the activities of both practitioners and researchers. The debate on ABC still occupies a central place in the accounting literature, showing contrasting interpretations of the benefits of this technique. For instance, Amaboldi and Lapsley (2003, 2004) have focused on the manner in which public sector organizations may adopt ABC as an act of imitation of the private sector to portray themselves as more “ businesslike”.

Furthermore, after the study of Cooper and Zmud (1990), several researchers have developed different interpretative perspectives, highlighting alternatively factors influencing ABC implementation (Shields, 1995; Swenson, 1995) or the stages of its application processes (Anderson, 1995; Gosselin, 1997). These two perspectives are interdependent as factors which can influence different stages, with a varied influence, over a project’s life. (Lapsley, 2005). This combined approach to investigating ABC is advanced by Krumwiede (1998), who studied the relationship between stages and factors in ABC adoption in a survey of U.

S. manufacturing firms. His argument was on the early adoption of ABC which is influenced by two factors: external factors (e. g. cost distortion and decision usefulness of cost information), and also internal factors (e. g. team size). In the implementation stages, the need to develop a routine system is predominant and Krumwiede (1998) identified several elements influencing ABC enactment. These are: the level of top management support; the level of non accounting ownership; the clarity and consensus for ABC objectives, training and purposes.

Anderson, Hayford and Young (2002) in its recent work covers a gap in the literature by addressing attention to a stage almost neglected by previous studies: the process of designing the ABC model. In particular, the team explores the interaction amongst team dynamics, composition, outcome and the external environment. However, the insights given by the present field study extend the frontier necessary to understand the factors influencing the application of this accounting technique for achieving and analyzing routine systems.

It is relevant to say while previous research offers a complete range of elements for investigating ABC, there are still two issues which remain partially unexplored; first, the identification of further dimensions related to group dynamics opens up the possibility of examining its influence in the implementation and use phases; second there is a general lack of case study research on ABC adoption, which would allow a deeper investigation of the complex interaction of environmental, organizational and human factors in its implementation.

A look at the public sector pinpoints to the fact that there have been several attempts to apply ABC systems. Even though, these contributions provide only a partial framework for interpreting the whole trajectory of ABC development, yet they were fundamental in informing this study; they highlighted specific dimensions characterizing the implementation of the costing technology in the public sector context. A first difference observed is in the adoption phase, where the influence of government requirements has been the trigger for public institutions to undertake this innovation in accounting systems.

However, the differing outcome for similar organizations has emphasized the emergence of an ‘enabler’ factor, understated in private sector research: the existence, within the organization, of a champion for ABC. According to Amaboldi & Lapsley, 2003), these champions sponsor and lead the implementation of the system, but their position and remit within the organization has often ended in the narrow application of ABC in marginal services or in unused systems. An ABC system has been recognized as an effective management tool in healthcare organizations (Chan, 1993; Lee & Mahenthiran, 1994, Upda, 1996).

These contributions enhanced the knowledge of a particular application field, hospitals, highlighting the presence of specific structural elements which can prevent the implementation of ABC. Lee and Mahenthiran (1994) investigated the structural elements influencing system implementation, highlighting the co-existence of different groups (medical professionals, administrators, lab technicians and nurses) with sometimes conflicting interests. The study revealed that an agreed common strategy is a prerequisite for carrying out an ABC exercise successfully.

This linkage to strategy is also an important issue in private sector studies (Anderson, 1995; Krumwiede, 1998; Anderson & Young, 1999; Anderson et al. , 2002). However, in healthcare, it is further complicated by the multidimensional nature of objectives. The main private sector goal, profit, does not apply in public sector organizations. Also, in hospitals physicians and administrators have different perspectives on service delivery and the final goal of the organization, which are not easily merged in a single strategy.

A similar complex pattern is shown moving from adoption to design and implementation (West & West, 1997; McGuire et al. , 1997). There are problems in all the phases of systems creation: the identification of activities, the identification of cost pools and the definition of the drivers. A common suggestion by all of these authors is to focus the ABC system on specific subunits within the organizations. The more recent literature shows two different trends. First, a further narrowing of this approach with several applications for specific medical processes (for example, Beecham et al. 2001) and Orlewska E. (2002)). This trend has affected the particular sphere of transfusion centers as well, where contributors have looked for cost alternatives at the systemic level (Goodman et al. , 2003; Varney & Guest, 2003; Syrjala et al. , 2001) or at technical process levels (Sonnenberg et al. , 1999; Strauss, 2001; Amin et al. , 2003). On the other hand there has been an interest in analyses of the usefulness of ABC for cost comparison in healthcare systems, particularly for hospitals and integrated care (Paulus et al. , 2002, Negrini et al. 2004) 2. 3Field Study: The Centre Service The setting for this research is a Health Centre Blood Transfusion Service (HCBTS) which is responsible for blood collection and provision in one of the Lagos State Healthcare organizations. HCBTS's major activities are in the collection and testing of blood and the manufacture of products for clinical purposes. The organizational configuration of HCBTS is complex as they carry out a wide range of activities related to blood processing, which may, however, be grouped into four major processes: blood supply chain, rotein fractionation, clinical diagnosis manufacturing and clinical services. The blood supply chain is the core process within HCBTS. The first phase (blood collection) is based in five different sites and it covers all the steps needed in

providing blood to the patient, from the collection to the final delivery. This process is strictly related to all the other chains: starting from the manufacturing plants as the providers of raw material, arriving at the clinical service, which is the fundamental link within the hospital for the use of blood.

Blood processing and testing by HCBTS is performed in centers situated in two major Lagos State cities. Stock management ensures that blood continues to be distributed according to need, and it facilitates the use of available supplies. Finally, the transport units, besides supporting blood collection activities, provide an integrated system for delivering HCBTS's products to hospitals on a daily basis. In addition to the supply chain, HCBTS has a manufacturing plant (Ayinke House – PL1).

A further process entails the development and manufacture of products for use in clinical diagnosis (PL1), bioscience research and further manufacturing. The product range includes reagents for blood grouping, hematology, clinical chemistry and immunochemistry. The last major activity is the Clinical Service, which plays an important role in completing the whole process: clinical staff (through five main local sites) support ordering and prescribing blood components for treatments. Part of the clinical services implies direct contact with the patient.

trajectory (over time and across all ABC ‘ creation’ phases); the field (transfusion service); the management and commitment to carry out the exercise.

The use of an embedded case study is justified by the need to analyze different levels and units within HCBTS: the organization as whole, the three subunits in which the system has been developed and individual actors in this organization. Data was collected using four main different sources for triangulation: public documentation, interviews, site visits, and assisted access to the organization’s information systems. First, an analysis was done on public documentation related to HCBTS (governmental studies, internet literature) which provided important background information.

The visits to the organization provided the main data for the analysis, in particular interviews. Twenty interviews were carried with key actors in HCBTS on ABC implementation. The duration of each interview was, on average, forty five minutes. These key actors had different positions within the organization including senior managers, operational managers, business manager, laboratory directors and technicians, and clinical directors. Furthermore, these interviewees had different roles in ABC development: as part of the project team, as users, or as external observers.

Each interview was based on a previously defined check list. Site visits added further sources of data for the study: the direct observation of plants, laboratories, delivering and stocking areas and access to internal programs and archives. This access was particularly important in understanding the difficulties of the ABC exercise and the complexity of the processes tackled.

4. 0Results The trajectory of ABC adoption in HCBTS is analyzed drawing on a framework which segments innovation in phases and analyses organizational factors as important features of the implementation.

The process of ABC application is referred to in four main stages: (1) the initiation and adoption, (2) the design, (3) the implementation and (4) the use of information. The second dimension collects the factors considered relevant to successful ABC adoption and implementation by different authors (Shields, 1995; Swenson, 1995; Shields ; McEwen, 1996; Krumwiede, 1998; Anderson et al. , 2002; Amaboldi ; Lapsley, 2003); further we include competition, which is usually not pertinent in public sector analyses.

This dimension was initiated by the particular organization studied here, in which some divisions have recently looked outside the Lagos State Health Management Services Board (LSHMSB) for additional revenues, with a more “ market oriented” management perspective. Exhibit 1 shows the framework adopted, which highlights previous research findings in the different phases. This framework has been used for interpreting the data collected, reporting on the whole trajectory of ABC creation, over the period 2002 - 2007. 4.

1Initiation and Adoption

The initial idea of implementing ABC at HCBTS in 1998 came from a top manager’s desire to understand the cost structure of the transfusion center. One distinctive feature here is the absence of any formal requirement from Lagos State government to implement this specific accounting system the adoption of an activity based approach. The specific choice of the technique was based on the presence of an ABC champion within the organization, who

advocated the benefits of ABC and more detailed cost information for decision making and control.

However, this first attempt was not finalized in a project: the commitment to the project was confined to a few people within the organization and the top management did not provide the resources (human and financial) necessary for successful implementation, which was not considered a strategic priority. This 'embryonic' idea was taken forward in 1999 when the commitment to the implementation was extended to all top managers.

This led the way to the strategic definition of the intervention: the definition of the scope and the identification of the project team. The scope was defined by selecting the subunits in which to implement the new accounting technique; HCBTS reflected the experience of other organizations in public sector and top managers preferred to narrow the exercise by focusing on one specific area, in this case the manufacturing plant (PL1). Second, top management faced the problem of identifying appropriate people to define the activity based framework.

Here, the complexity of activities and the lack of competencies within the institution led to the recruitment of an external consultant. Again the exercise was stopped, as in 1998, a major re-organization was needed and resources were directed elsewhere. The third, and last, attempt started in 2001, when top management recognized the urgency of adopting a more precise costing system. The change in managers' priorities was determined by the evolution of both external and internal conditions.

Between 1998 and 2000, there were many environmental changes which emphasized the need to have a better understanding of costs: the increasing attention of government in controlling expenditure, a continuous reduction of funds, the appearance of vCJD and finally the opportunity of developing the marketing activities of the organization. This perceived need for a more refined costing system and “management orientation” was shared by many managers across HCBTS at this last attempt. These views supported the persistence of the champion who was still convinced of the benefits of ABC.

Further, the third attempt was favored by another internal condition: a major re-organization of 2001. This was a priority which focused the efforts of top, middle and low managers across the organization, diverting resources from the second ABC intervention and other projects. Only after this ‘intense’ intervention was resolved was management’s attention ready to be directed to other strategic projects. The three initiatives at HCBTS showed an evolution in the number of enablers encountered, but with a constant factor: the champion. His presence and persistence in adopting ABC was a trigger for all three attempts.

However, this was not enough to carry out the exercise; top management commitment, the linkage with organization priorities and resources proved to be necessary conditions for taking forward the exercise. As argued by Krumwiede (1998), these three elements are strictly related to each other. The implementation of complex systems, such as ABC, needs a significant amount of resources (financial, human and organizational), and further, if the adoption foresees the actual deployment in the routine of the organization, it

becomes a strategic issue and widespread support across the organization is required. 4. 2 System Design

The creation of an ABC system comprises eight phases: (1) determine the scope of the system; (2) set aside direct costs; (3) locate costs in the general ledger; (4) store costs in cost pools; (5) determine activity drivers; (6) spread costs from secondary to primary cost pools; (7) calculate the overhead cost per activity unit; and (8) assign activity costs to cost objects. These steps had been carried out twice at HCBTS, in 2002 and in 2007. However, these two interventions differed substantially in scope and management. This gives a significant opportunity to see the effects of different paths in the same organization.

In 2002, the ABC intervention applied to only one subunit (PL1) within the organization and the exercise was carried out mainly by an external consultant. He supplied the required technical competence to deal with a complex accounting system. A restriction of the design and the experience of the consultant facilitated the definition of activities and drivers. The involvement of internal staff was marginal; this reduced the timescale and avoided the creation of work overload, but at the same time did not allow an upgrading of organizational competencies, or prepare the foundations for routine adoption of this costing system.

This particular facet of using external consultants is neglected in Anderson's focus on the design phase (2002), which does not take into account the influences of this choice on the following stages. The limited involvement of staff in the design is certainly beneficial for reducing their workload, but it

reduces involvement with and understanding of the practical difficulties of ABC. A higher involvement of staff in implementation acts dually: at the technical level, it introduces staff to a system that they will use; second their involvement can reduce resistance during implementation.

This issue is even more important for activity based approaches, which require considerable time to be dedicated to each activity to attribute personnel costs. The second design phase started in 2007 under the auspices of a wide-ranging management commitment and the support of this initiative as a priority. This urgency resulted in the development of the ABC model for the whole organization. The previous experience of HCBTS pointed to the need to involve staff more directly. However, their lack of expertise led top management to hire an accountant with considerable experience of ABC, who became the project manager.

The preparation of the project was not straightforward. The complexity of the organization, the specificity of the manufacturing processes and services required four different work teams which managed the design in HCBTS subunits: the supply chain, the manufacturing plant and the clinical services. Each work team consisted of the lead financial manager and key actors within each subunit involved; the size of the teams was differentiated: two people for PLI, three for the Blood supply chain, and five for the Clinical services. Contrary to the findings of Anderson et al. 2002) the increase in team size was a critical issue for HCBTS. The major reason for this difference is related to the type of teams included in their research, which consisted of people with a homogenous background. The largest group at HCBTS (clinical service) was instead extremely heterogeneous, including clinicians,

laboratory technicians and finance people. Their different perspectives on the process were essential in mapping out the activities of this service, but this increase the design time. Clinicians were the most critical and their resistance was emphasized by the geographical distance from the headquarters.

Though the four subunits are formally accountable to HCBTS, they are situated in hospitals, in which the commitment of HCBTS top management is weaker. This shows the importance of top management commitment in the design stage, which is germane to maintain the impetus of the project. As the boundaries of organizations are crossed, the influence on human resources tends to diminish, reducing the power of project management staffs efforts. The complexity of the processes within HCBTS was another major problem in designing ABC.

This issue is not new, in particular among public sector researchers. They have often cautioned against carrying out empirical applications applying ABC methodology as the identification of activities and drivers is certainly not straightforward. The characteristics of the HCBTS present a further complex context in which there are three subunits with significant differences. The establishment of three work teams helped in dealing with this complexity. However the different backgrounds of each team leaders inhibited advances in designing the framework.

All the teams struggled in the identification of activities and drivers, but there were specific problems in some areas. The design at the PL1 was the easiest as the team could rely on the information obtained during the 2002

experimentation, on the knowledge of ABC of the team leader, and on the availability of clear process maps. The Supply Chain framework definition was crucial as it is the core activity of HCBTS; the project manager devoted his major effort to this area and his contribution was extremely relevant in providing technical support and energizing staff efforts.

Finally, the clinical service design was longer because of the complexity of the processes themselves and the behavioral issues discussed above. It is evident that team competencies are fundamental; further, the rationale of the ABC system requires knowledge at different levels: ABC – structure and functioning, processes addressed and the existing accounting system. 4. 3 Implementation The steps in which this phase may be divided vary significantly if the ABC application studied is carried out as an ad hoc exercise or if it is planned to become a routine system.

While there are many examples of ABC adoption and design, the number of cases of operational systems is significantly lower. This situation is related to the amount of data needed to maintain these systems, which made many organizations decide against the use of ABC on a routine basis, but to use it for ad hoc exercises. Indeed, ad hoc applications are very useful to get a better understanding of cost drivers and further identifying value and non-value added activities (Lee ; Mahenthiran, 1994).

The case presented here is the unusual case of a desire to implement ABC as a routine system. This case study, therefore, examined the steps required to integrate ABC into the present accounting system. These steps are: data collection, data entry and calculation, and accounting system revision. The

last step refers only to routine applications and it is related to three main issues: the revision of information systems, the definition of organizational responsibilities for operational running, and the frequency of data collection.

The desire to build a routine system led top management at HCBTS to purchase from the outset an information device for supporting ABC. The selection of software was a crucial phase, as a number of elements needed to be considered: usability, interaction with other information systems, the scope for modifying activities and drivers, and the availability of reports. Top management decided to buy a flexible software package which was then adjusted and tailored to their systems by the three team leaders.

The choice not to commit this task to external consultants was unusual and driven by the desire to create permanent competencies within the organization and maintain the ownership of the whole implementation process. Team leaders faced many difficulties in uploading data (cost, activities and drivers), as the software was not easy to deal with; furthermore this situation was worsened by the inappropriate timing of training. The training on the software was provided two months after the procurement of the information system, due to contingent problems.

However the desire of the top management to conclude the ABC application pressured the teams to begin the implementation of the system. This implementation plan resulted in a considerable differentiation in the development time for the three subunits, which is explained by the different team competencies. The implementation at PL1 was the easiest as the team included a person with particular skills in dealing with these information

systems and the ABC models. The problems in the implementation were mainly due to the difficulties in organizing all the data to be uploaded in the software: activities costs and drivers.

The PL1 team leader overcame these problems by preparing an Excel file in which he collected all the costs to be apportioned to activities, evaluated the allocation basis for dividing these costs, and finally quantified all the drivers used. This intermediate step organized the information in an accessible way before using the software. Thereafter, the data entry and software definition was completed in all the subunits, but two problems emerged; first not all the subunits had software for collecting labour time and second there were problems in interaction with existing information systems.

Though both issues were considered during the software selection, the actual implementation showed some pitfalls. Top management adopted a partial manual upload of data, with the intention to use a software society to interface the ABC system with the accounting system, the staff time database and the manufacturing databases, which provided a lot of data used as drivers. This technical element is not included in the framework, as previous ABC analyses tended to focus attention on organizational and behavioral issues.

However, this issue is not new for managers who have to implement new information systems as reported by the project management literature (see for example Partington, 1996; Zakarian et al. , 2001; Arnaboldi et al. , 2004). The decision on the frequency of ABC reports was unresolved at the time of this study and will be dependent on the software problem solution. 4. 4 Use

of Information The last stage of this study analyzed the actual use of the information provided by the ABC information systems.

The four main areas in which ABC information can be used are: stock evaluation, decision making, performance measurement and motivation (Johnson ; Kaplan, 1987; Govindarajan ; Shank, 1992; Greenwood ; Reeve, 1994; Merchant ; Shields, 1993). The debate on the usefulness of more precise cost information and particularly of a more detailed allocation of overhead is high; the difference among the subunits at HCBTS provides an interesting picture on these issues and it adds to this debate. Managers at PL1 used the information from the ABC systems as soon as they were available.

Operational and business managers considered data to be urgent for an evaluation of the cost of the products and services sold outside Lagos State Health Management Services Board (LSHMSB), which had never been previously costed. This situation is typical in public sector organizations in which cost issues have been neglected for two main reasons: the need to provide products and services to citizens, without consideration of financial matters such as cost recovery and second reliance on government funding.

From these evaluations, the next step, at PL1, was making decisions; first they decided to negotiate higher prices where this was needed, second they stopped the production of some product-lines. The mixed (public and market oriented) nature of the organization emerged clearly, in this decision. The use of costs in the other subunits was marginal. It is important to say that PL1 managers obtained the ABC information significantly before other

subunits but two elements seemed to play a fundamental role at this last stage: the commitment within the subunit and competition.

The urgency of appraising the potential of expanding markets was a trigger in immediately using this refined cost information. 5. 0Conclusion The paper has reported on the implementation of Activity Based Costing in a healthcare setting; these findings have implications generally, for the implementation of novel accounting technologies in healthcare settings. This application is significant at different levels: the persistence in system implementation (from 1998 to 2008), the scope of the project (the whole organization) and the actual achievement of results in ABC implementation on use (though only in some divisions).

The embedded case study analyzed the organizations under different perspectives, investigating reactions, behaviors and results in the three subunits arising from the three attempts at ABC implementation. The repetition of the implementation along eleven years in particular favoured the comparison of different management choices in managing the project; while the different market attitude of the HCBTS's subunits provided a comparison of more market-oriented divisions against divisions still deeply embedded in the Lagos State healthcare system.

The study identified a number of factors which have influenced the implementation of ABC: top management support, corporate strategy and resources; the presence of a champion for ABC; external consultants; team size and heterogeneity; a competitive environment; training and interaction with existing systems. Similarly, these dimensions appear to influence the

stages of (1) adoption, (2) design, (3) implementation, and (4) use of information. Top management support is crucial for getting the ABC project started, but had a limited impact beyond that, in this study.

However, the champion of ABC had influence across all eight stages of implementation, but with less power at the ultimate ‘ use of information’ stage. The design stage is important with a variety of factors impacting on whether the ABC project would proceed to the implementation phase. The progression from implementation of ABC to actual use was influenced by the existence of a competitive environment and by effective interaction with existing information systems. These findings underline the complexity of healthcare organizations as settings for accounting innovations.

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