

**ACCOUNTING TRENDS:
SOME EXPERIENCES AT THE BANCO DE LA REPUBLICA**

By Claudia Arias¹

I. INTRODUCTION

Organizations of different types consider information as the main tool in the decision-making process--it is the engine that provides dynamism and support to corporate strategies. Institutions of all types must have efficient and effective systems that adjust to different user needs and that are continuously evolving in the midst of a changing world.

There is no doubt that traditional accounting, principally oriented toward supplying financial statements, does not provide all the information required by top managers, as does the present global, competitive, changing technology and its focus on client service trends. Technology has developed at an amazing pace, so much so that it has solved the on-going accounting record problems of the past. We ask ourselves the question whether technology has replaced the every day role of an accountant? Definitely not. On the contrary, more added value has been given to information--all of which will help to achieve the goals of central banks.

The main mission of the accounting areas in their work process is to provide quantitative information in response to user needs. This information serves to assist in the decision-making process in a way that is timely and that meets quality and user expectations in their objective to maximize an institution's benefits. Patently, this quantitative information does not limit itself solely to financial data or monetary amounts, but must supplement non-financial and structured

¹ The author is the Accounting and Financial Assistant to Banco de la República's Accounting Department. The opinions and comments here expressed are the sole responsibility of the author.

information from various perspectives. The implementation, therefore, of advanced new technology is being headed by people that the IT industry tends to look down upon: accountants².

This paper intends to show, from a practical rather than theoretical standpoint, the application given by the Banco de la República to its accounting processes, and to show the new developments and trends experienced at the Bank, which have been internationally in place for some time, such as *Dematerialized Accounting* or *Non-record Accounting*, *Matrix* or *Multidimensional Accounting*, *Non-monetary Value Accounting*, and *Service Accounting*, among others, with particular emphasis on cost accounting based on activities.

This paper hopes to elicit discussions among those of us responsible for the accounting area in our central banks, so that we can evaluate our actions as professionals in this field. As Kaplan and Cooper stated, this will allow the accounting process to change from the passive informer role of the past to the proactive function of the future.

II. THE IMPLEMENTATION OF NEW ACCOUNTING TECHNOLOGY AT THE BANCO DE LA REPUBLICA

As mentioned in the introduction, this section covers some developments that have been implemented or that are being studied and assessed in our Bank, and the use given to such technology by the various information actors.

² Peter Druker, Management Challenges for the XXI Century.

1. Dematerialized Accounting or Non-record Accounting. One of the paradigms pertaining to accounting and auditing--which fortunately has developed well--has been to suppose that accounting records had to be kept physically, i.e., on paper. Technological progress today has made it possible to keep records electronically and, though not on paper, they nevertheless remain physical. This provides advantages related to the optimization of resources, both physical (paper, printers, premises, etc.) and human, because keeping and auditing accounting is no longer based on physical books, but it is kept electronically, and on line. These solutions, therefore, require a cultural change when preparing and analyzing accounting.

The Banco de la República's accounting information system, SIC, implemented in 1999, is an integrated management accounting system based on opportunity, consistency, security and flexibility criteria. It was through this system that electronic accounting was first implemented. It has the "Intelligent Codifier," a dynamic and flexible tool that allows for the electronic integration of economic events coming from the other corporate applications. This accounting system automatically converts the defined entry data for each transaction into electronic accounting records. The SIC System covers the following basic phases in order to generate accounting information:

- **Report of economic events (entries).** Various corporate applications report their economic events electronically, accompanied by some basic entry data--the accounting records. Behind these economic events are all the documentation or the electronic records duly authorized by the Bank's appointed officials, as the case may be.

Once the entry data is available in the SIC System, then a monitoring or follow-up process is triggered. It reviews data consistency and operational statistics; i.e., who

initiated the process, who authorized it, date and hour, the terminal it came from, and so on. Once this validation process has been completed, we are able to know how various areas and branches of the Bank are sending the information contained in the economic events. At this phase, reported economic events have been validated and are ready for accounting purposes.

- **Data Processing.** This phase involves carrying out a series of logical steps that are centralized, so that reported data (economic events) in the previous phase will become the accounting information required by different users. From here, the SIC System's intelligent codifier runs through entry records, consults the defined accounting flow diagrams for each transaction, validates the information (accounting diagrams, accounts, parameters, accounting equals, etc.) and then generates the accounting information automatically and on line. During this phase, each economic event generates the supporting electronic voucher, which then affects all the related accounts simultaneously.

In this way, the SIC System accounting vouchers are electronic and, therefore, they are the originals containing the access keys of people who participate in the process of generating and approving the economic event producing the accounting record.

- **Use of Information (Outgo).** The last phase of the accounting process consists of using the information to reach the goals set according to the users' need, both internally and externally. The SIC System therefore provides for on-line consultations and the possibility of generating and printing out reports, which include the accounting support documents and books, among others.

2. Matrix Accounting or Multidimensional Accounting. Different users require diverse perspectives or dimensions of information, which are not possible to furnish under the sole concept of double-entry accounting. Five years ago, the Banco de la República implemented a matrix or multidimensional accounting system, which provides more and better information to various users. Thus multicurrency, multiple structures and the parameter model have been developed. These are described as follows:

- **Multicurrency General Ledger.** Its operation and control are fully automated. All trades forming part of the accounting process are identified by their monetary origin and, through a given exchange rate, the value of the transaction is calculated at its monetary equivalency.

Each account stores the initial and final balances, as well as movements by monetary origin. So we are able to know the balances and movements in the currency of origin (dollars, Euros, Yen, Degr, etc.), and their equivalent in US dollars (pattern currency), as well as in the local currency.

This application avoids having extra accounting processes in place, which were used to determine the equivalents of various monetary origins, normally carried out outside the accounting process and/or through memoranda accounts. Further, it offers monetary origins and equivalencies required by users for consultation or report purposes.

- **Multiple Structures.** The accounting of an institution is organized from a basic structure (card of accounts), and it is generally oriented to supplying the information needs of

certain users. However, this information may have to be categorized, based on diverse criteria for internal analytical purposes or to meet requirements from outside.

If we are to solve these problems efficiently, we have to design the structures from the card of accounts, required so as to group or present the accounting information by associating accounts between the card of accounts and those for special purposes. It is a matter of then drawing out from the official source structured information by specific criteria in a way that is both automatic and on line, without having to manipulate it outside the books or incur costly manual processes.

Multiple structures have diverse applications at the Banco de la República. The currency balance sheet, for example, is taken accurately from the GL, but its presentation (grouping) changes against the basic financial statements, the public accounting financial statements, the financial statements of a segment, and so on.

- **Parameter model.** Users of accounting information and accountants are all used to recording economic events, using the double-entry accounting system, and using a card of accounts structure hierarchically. Although very creative and in use for around five centuries, these systems pose serious limitations to the accounting process by not allowing the information to be seen according to different criteria, apart from producing an unjustifiable volume of records and accounts.

It is not a question of abandoning the double-entry accounting system, but of supplementing it with the concept of **matrix accounting**, so that each account (according to the needs or criteria of each user) stores through parameters, balances

and movements, without having to establish additional accounts.

To understand this better, let us look at an accounting record using the two systems: a) double-entry system, and b) matrix system (parameters). Suppose then that we have been granted loans needing to appear in the GL with the following criteria: i) credit risk, ii) economic event, iii) credit line, and iv) financial intermediary.

A) Double-entry System

CODE	ACCOUNT	CRITERION (OBJECTIVE)
14	INTERNAL CREDIT	
1401	NORMAL RISK	Credit risk
140105	PUBLIC SECTOR	Economic sectorization
140110	FINANCIAL SECTOR	Economic sectorization
14011005	LIQUIDITY SUPPORT –A	Credit line
140110051	BANK X	Financial intermediary
140110052	BANK Y	Financial intermediary
14011010	LIQUIDITY SUPPORT –B	Credit line
140110101	BANK X	Financial intermediary
140110102	BANK Y	Financial intermediary
1402	ACCEPTABLE RISK	Credit risk

Although in this case the double-entry system allowed a loan to be reflected in the accounting according to the required criteria, it nevertheless has the following inconveniences: i) it is necessary to create additional sub-accounts, which in some cases can mean huge volumes, ii) because the card of accounts is hierarchical, it is not possible to know at first hand the total amount of a specific credit line, for example. So we would have to add manually the liquidity support recorded under account 1401 "Normal Risk," as well as the accumulated amounts under account 1402 "Acceptable Risk." The same would happen when referring to financial intermediaries.

B) Multidimensional System

This system is based on a matrix, where lines represent accounts and columns represent parameters (criteria) associated with each of them. So, with just one record, each account stores the required criteria that can then be consulted according to need.

Account	Parameter 1 Sectorization	Parameter 2 Credit Line	Parameter 3 Financial Intermediary	Parameter 4 Current Account
14	X	X	X	
1401	X	X	X	
1402	X	X	X	
21	X		X	X

3. Service Accounting. Instead of concentrating solely on preparing financial statements, this involves providing attention and service to clients by furnishing more value-added information. All types of organizations--including central banks--require both financial and non-financial information (non-monetary accounting), so as to evaluate performance and increase productivity in their various processes.

Given the importance of this subject, we will describe concepts and their practical aspects for a cost management system, based on the Activity Based Costing (ABC) method.

III. THE COST MANAGEMENT SYSTEM BASED ON ACTIVITY BASED COSTING

Introduction

Institutions today and, of course, central banks need to rely on information related to support service costs and final ones, provided both internally and externally.

As mentioned earlier, most accountants followed practices which were successful in the past but which are no longer efficient and do not add value to organizations. Although cases abound in the area of accounting, let us concentrate on the cost factor. Few want to abandon the cost of products and services based on the labor aspect, indirect costs, etc. There are still sectors not aware of the difference between "cost analysis" (strictly economic in nature), "cost accounting" (an obsolete and outdated practice), and "management accounting" (strategic in focus).

More than ever, management accounting brings together such components as quality, cost and time, and focuses on generating value-added. Analyzing just profit or yield is a thing of the past.

In the search for efficient methods of managing costs by banking institutions, Activity Based Costing has been found to be a strategic and flexible tool in decision-making.

Although the management accounting tradition is scarce in the banking sector, there has been an increasing tendency, over the past five years, to use the ABC method in banks and services, as traditional methods have not responded to their needs. The ABC method does not respond to complex matters of banking management, but it does help with strategic decisions.

What do we mean by the management accounting-cost accounting?

It is a system within the framework of what we know to be the accounting components of information for management, because they all furnish useful and relevant information for

management, such as, strategic management accounting, financial accounting, and management accounting.

Cost accounting in a central bank is a system that analyzes internal procedures in order to provide the most adequate flows of information so as to make optimum decisions. To achieve this, it should be based on:

- A complete technical analysis of an institution's internal procedures
- The particular aspects of a central bank, especially its macroeconomic aspects
- Information flow requirements
- The possibility of obtaining the information both financially and technically

The purpose of the ABC method is to understand the economic performance of an organization. The management is responsible for its performance and not the accountants. But it is the combination of the financial perspective with the non-financial one that offers the greatest opportunity for change.

It is normal that managers will not discuss what they will do with the results of the analysis of their business, because the decisions to be made will be strategic. The system does not focus on reducing the size of an organization, but on becoming a tool designed to give support to growth.

Justifying the use of the ABC System in a central bank

A central bank's activities are of wide scope and include cash flow management, as well as

providing services to the financial system. Generally, there is a menu of rates associated with these services, and it necessarily based on a modern cost structure, which not only reveals the cost of services, but also how and for what purpose the funds are used.

The ABC System is designed to provide information to Directors and Management of a central bank and to help them manage their business with continuity. Thus the efficient and effective use of resources is most needful. ABC provides new internal information that combines the operational and financial aspects to the detail needed, so that managers can make decisions. In some cases, it is risky to make decisions based solely on the accounting figures, without taking into account the ABC information.

The ABC Method, Basic Concepts

Although this paper does not contain an exhaustive explanation of Activity Based Costing, we will describe the principles on which it is based:

ABC stands for Activity Based Costing and its methodology designates the costs and charges of an organization.

The ABC methodology is based on the fact that for an institution to produce products or services, activities will be carried out that require use of funds; hence, activities are first paid for and then the charge for such an activity is assigned to the different cost objects (services, clients, etc.) requiring such activities.

The complete scope of the ABC includes the activities of an organization's main processes; you

may begin with some of them and slowly incorporate the remainder.

An activity is a unit of work in an organization and, hence, it uses up resources.

A cost object determines the work burden and the necessary effort of an activity, together with the funds required. These are the objects upon which the indirect costs of a firm are distributed. These cost objects may be products, services, and clients. The cost designators are the factors that determine the work burden required.

Important aspects to consider when implementing the ABC method

Following are some important reasons that justify the implementation of an ABC system:

- Adequate automated transaction systems
- Adequate costing system
- Significant indirect expenses
- High diversity of services and clients

How to organize an ABC project

Although the ABC system is worth implementing because of the excellent opportunities it opens up, yet this type of project has its degree of difficulties and risks. To ensure positive results from the work done and funds earmarked, the top Management has to carry out a series of important preliminary activities when organizing a project of this nature, as follows:

1. Establishing a project management committee.
2. Establishing a project technical committee.

3. Determining a working team and the administrative and operational areas.
4. Training the above working groups in the ABC techniques and methodology required for implementation.

Definition of scope and focus of the project

Scope

Once you have the support and participation of the top Management and areas have been covered, the next step has to do with validating the scope and focus of the ABC project as envisioned initially for the various numbers of areas involved.

Defining the scope of the project also takes into account the final services and their costing.

Focus

Defining the focus has to do with determining the way in which the system is to be implemented in terms of degree of integration, periodicity, and use of information provided.

Normally there are three options when implementing the ABC method: pilot project, permanent implementation, and a totally integrated implementation. The ideal is to put all three into place but progressively one after the other.

System design and implementation

Once the focus and scope of the project is defined, and the working groups and related project

personnel have been organized and trained, the activity model for each area is then designed. Here, the resources, activities, products or services (cost objects), drivers and clients have all been identified.

Parallel to these activities, a financial and operational data source analysis would have to be done, which would feed the system and the selection and acquisition process of the application upon which the model would be built and the system run. Once this task has been completed, the System Administration Manuals, the Model Administration Manual, and a selected application for purchase would all be developed. The computerized model is to be built on the application and it should be run both with the time and operational data established by each of the areas involved.

Bibliography

Capital intelectual. Contabilidad del conocimiento. Samuel Alberto Mantilla B. Asociación Colombiana de Costos y Contabilidad Directiva. Segunda edición. Septiembre de 2000.

Cuaderno de Contabilidad No. 6. "Entorno internacional de la Contabilidad Gerencial". Universidad Javeriana. 1999. Segunda edición. Primera edición. 1999.

Coste y Efecto. Cómo usar el ABC, el ABM y el ABB para mejorar la gestión, los procesos y la rentabilidad. Robert S. Kaplan y Robin Cooper. Gestion 2000.

