BANCO CENTRAL DO BRASIL

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Deputy Governor for Administrative Affairs

Planning and Budget Department

THE BANCO CENTRAL DO BRASIL'S COST SYSTEM

A CASE STUDY

Prepared by the Cost and Managerial Information Consultancy Team, Planning and Budget Department

BANCO CENTRAL DO BRASIL

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Foreword

This work reports the experience in implementing the Banco Central do Brasil's Cost and Managerial Information System. The Banco Central do Brasil (BCB) is an autonomous indirect public administration institution that is part of the National Financial System (SFN), reporting to the Ministry of Finance.

Aware that most Brazilian public bodies has not up to now exercised a systematic assessment of their costs, and those who do use a methodology other than the Activity-Based Costing (ABC), the BCB thought relevant to disclose this pioneer initiative in the scope of the Brazilian federal civil service, even as an expression of the Bank's effort in pursuing increased efficiency and control in using the resources at hand.

This endeavor is inserted in the context of changing management principles, methods and tools, experienced by public organizations in recent years, triggered by examples of other countries, in the wake of the so-called new public management. As a consequence, the need to improve the assessment of costs in different government entities has gained strength, aiming at improving efficiency in the sector.

Given this new context, the purpose of this case study is to produce a report on the experience with the development and implementation process of such System by the Banco Central do Brasil, both as a way of sharing results and as an opportunity of supplying other public organizations with the motivation and information on the carrying out of similar procedures.

Brasília, April, 2004.

José Clóvis B. Dattoli

Head of Planning and Budget Department

1. Introduction

The Banco Central do Brasil (BCB), when exercising the effort to implement a cost system, is in harmony with the growing trend to increasingly disseminate, within the domestic public sector, the managerial principles of efficacy, efficiency, economicity and assessment of results.

Any motivating idea to implement a cost system in the government shall be in consonance with the following basic dimensions regarding supply of public services:

- Planning – The setting of strategies, a time when the goals of the service to be rendered are defined;
- Budget – A crucial step, since this is when all activities and projects are ranked according to different variables and identifying magnitudes of the service, using the same analytical units that later will yield the cost and information gathering system used in management control;
- Management – This is the phase where one detects the importance of administration *vis-à-vis* the specification of goals and where there should be a clear division between the political – intrinsic to administration – and technical and economic realms within the organization, being such not a mutual independence but a balance between the need to management control and organization autonomy to make decisions. This is the management phase in which service performance is controlled. Ideally, this control should be proactive (previous). It is an internal control, detecting and correcting managerial problems, relying on the existence of an information system focused on assessing the execution and quality of actions, including the analysis of the respective costs incurred.

This new view of the public administration is translated in what came to be called the New Public Management.

The term new public management has been frequently used all over the world and seemingly describes a global trend towards some kind of managerial reform, contributing to a more cost-conscious and managerial view of the government administration.

Therefore, public sector companies have adopted administration practices typical of the private sector, including the pursue of efficiency and efficacy in the supply of services, more rational management systems, with the setting of specific and quantitative goals in the context of a strategic planning turning increasingly usual, performance assessment with the payment of bonuses and ensuing incentives, in addition to resorting to benchmarking in monopolistic or exclusivistic bodies and entities. Incidentally, this increasing use of benchmarking techniques in domestic government agencies – and among those and similar agencies abroad – yields excellent opportunities to assess and rank services and work processes, with the aim to improve the organization.

Public sector managers have been urged to display, each day, a management style more participative and sensitive to the need of anticipating facts. In addition, more autonomous decision-making has been observed in the public sector and, as a result, flexibility and initiative came also to be a distinctive mark of behavior in this sector.

In the wake of new challenges that have been posed to public managers, a range of managerial instruments is being incorporated by public organizations with the purpose of giving their managers better managerial abilities. An example of such instruments is a cost system that enables not only to quantify the costs of the procedures performed by the organization, but also to establish adequate performance standards in harmony with the expectations of the society.

In this context, this case study is structured in a way to describe the development process of the BCB's Cost System, since its inception through its effective implementation and actions taken as follow-up and use of the System with the establishment of indicators and regular managerial information reports and bulletins. More specifically, the chapter 2 deals with the decisive issues in adopting the System, such as previous initiatives, development phases and characteristics of the

model used. The chapter 3, in turn, analyzes some relevant topics that may be at the foundation of similar initiatives, based on the fetters reported along the process, and lays down some final considerations.

2. The Banco Central do Brasil's Cost System

The Banco Central do Brasil (BCB) developed and implemented, between April 2002 and June 2003, the Cost and Managerial Information System to assess costs of activities developed and products generated by the Institution. Created to be an instrument of management support, the System enables assessment, detailing and analysis of service, activity process and macro process costs, distributed by the Bank organizational structure, including deputy governor offices, units, divisions and regional administrative offices.

The importance of such initiative stems from its innovative character in the Brazilian Public Administration, in addition to pioneering among central banks. This was an ambitious project to the extent that it was not tested in a pilot-area, but rather developed for the whole organization that counted about 4,700 staff members at the time, distributed over forty different units (departments, executive offices and regional administrative offices) in ten capital cities where the Institution is represented.

Moreover, The Banco Central do Brasil is a public sector service institution of monopolistic character, and there was no previous experience in comparable organizations using the current Activity-Based Cost (ABC) methodology. Another challenge was the diversity of working processes and the large number of activities, in addition to flexibility constraints typical of the public sector itself.

2.1 Previous initiatives

The adoption of a cost system in the Banco Central do Brasil has been under discussion since 1992, as a result of the strategic planning carried out at that time. At the occasion, implementation

of a cost system was sought, internally developed by staff members. The initiative, however, failed to be completed for technical reasons.

In April 1998, the BCB held a new strategic managerial meeting where, among the goals defined for the three subsequent years, it established new improved administrative policies, qualifying the Institution through the development and implementation of a cost system.

Consequently, a proposal was made for inclusion of the cost system project within the BCB's Action Instruments Improvement Program with the National Financial System, supported by the World Bank. Later, an external consultancy firm prepared the Terms of Reference for selecting and hiring a firm that would be responsible for the development and implementation of such system. To this end, in November 1998, an individual consultant, Dr. Iran Siqueira Lima, was hired to define the scope of the project. Despite its efforts, the Banco Central do Brasil, on that occasion, decided to halt the process while improving the System specifications and bringing it in closer alignment with the Bank's specificities.

The project was effectively resumed in 2000, after Complementary Law 101, of April 5,2000 (Fiscal Responsibility Law) came into effect. This law represented the foundation that has definitely driven the process of implementing a cost system in the Banco Central do Brasil. The law includes the following provisions:

"Article 50, paragraph 3: The Public Administration shall keep a cost system, which enables assessment and follow-up of budget, financial and asset management".

2.2 Development of the Cost System

Implementation of the BCB's Cost and Managerial Information System started with the establishment of a working group of staff members, located in the Financial Administration Department (Deafi) and in Planning and Budget Department (Depla), with the purpose of selecting

a cost methodology to be used by the Bank and preparing final specifications to retain a consultancy firm that would model, develop and implement the System.

In the first phase of the project, the working group analyzed the existing cost assessment methodologies and revised the legislation on the subject, including the Fiscal Responsibility Law and the Budgetary Directives Law.

During the work, the group participated in cost seminars and visited different public bodies and private companies that had implemented the Activity-Based Cost methodology. Moreover, the team visited consultancy firms with established experience on the field in order to verify the results already attained and gather information on existing softwares and methodologies.

The final report submitted selected the Activity-Based Cost as the most appropriate to the Banco Central do Brasil, because it made possible to attach administrative expenditures to products and services and enabled measurement of costs that do not aggregate value, contributing to a better analysis of working processes, eliminating waste and optimizing the use of budget resources. Besides, the report stressed that the use of the ABC solution by service companies, industries and public institutions, all over the world, was a relevant factor for adopting such methodology.

In September 2000, the firm *Estratege Assessoria Empresarial Ltda*. was hired to help surveying the Bank requirements and prepare the specifications that would integrate the procurement process to hire the company that would be in charge of developing and implementing the BCB's Costs and Managerial Information System. The working group was supported by external consultancy services, provided by Professor Lino Martins da Silva – an experienced expert in the area of public administration costs - in monitoring the services provided by Estratege and advising the BCB's team.

Firstly, the group identified business processes, grouped into macro activities whenever displaying similar purposes. After that, the group recognized the following functional macro processes: formulation and management of monetary and foreign exchange policies; regulation and

supervision of the National Financial System; and management of the Brazilian Payment System (SPB) and currency.

The specification of objects (products) that would be cost out by the System privileged the finalistic macro processes, while the working processes of departments and macro activities were related in a way to have their costs driven to macro processes.

The survey of the Bank requirements and system specifications were completed in April 2001 and, in April 2002, the international invitation to bid was completed in order to hire the consultancy firm that would be in charge of developing and implementing the Cost System.

The winning firm – subsequently retained to carry out the project – was a syndicate of the companies KPMG Consulting and KPMG Auditing. The former, lately changed into Bearing Point Ltda., was in charge of developing the technological solution for the System, including the solution to gather information from the Bank's several systems. The latter remained in charge of developing the conceptual model to be applied. The work of implementing, testing and training the BCB's teams was carried out between May 2002 and May 2003, an endeavor that may be considered highly successful in view of the magnitude of the project.

The project was entirely paid by the BCB's Action Instruments Improvement Program funds, within the Bank Modernization Program, sponsored by the International Bank for Reconstruction and Development (IBRD), as previously mentioned.

The development of the Cost System was hired for implementation in a corporative way, encompassing all departments and the operations related to them, with the following main goals:

- Measuring and controlling the Bank administrative costs;
- Quantifying the value of services offered to society (macro-processes);
- Measuring the degree of efficiency and efficacy in the performance of its functions;

- Gather information for the planning of the Bank and for helping control the carrying out of activities;
- Comply with the Fiscal Responsibility Law.

2.2.1 The Banco Central do Brasil's cost model ABC methodology

The Activity-Based Costing (ABC) was the cost methodology used in the Banco Central do Brasil cost model. Its main feature, when contrasted with other traditional models of cost assessment, is the refined treatment given to overhead costs. The ABC methodology consists of three main dimensions: resources, activities and cost objects. Cost objects (products or services to which one wishes to attach a cost), in order to be supplied, require activities to be carried out (combination of different resources to generate a certain service) that need resources involved in all expenditures resulting from the business management and operation. Consequently, by establishing cost drivers (consumption rates/cost allocation) from resources to activities and from activities to cost objects, one obtains the cost of cost objects, according to the following arrangement:

Resources

↓

Cost drivers

↓

Activities

↓

Cost drivers

↓

Cost objects

As it may be seen, the Cost System model developed for the Banco Central do Brasil has three modules: resource module, activity module and cost object module.

Resource module

The resource module receives information from different systems of the Bank (human resources, contracts, budget, consumption materials, furniture and fixtures, travels, accounting and other low platform data) that are obtained at different levels of aggregation, for example, by regional office, department or division. To assure data consistency, all values calculated by the Cost System are in line with accounting records. In other words, the values of the resources calculated are in harmony with the balances recorded in the corresponding accounts used by the BCB's Accounting System.

The module is structured in two large groups. One receives resources that need to be properly allocated up to the division level, when they are, in turn, driven to activities. The other comprises the organizational hierarchical structure, and may receive resources from the previous group or from some of the Bank systems. These resources need to be further allocated until reaching the level of division.

As an example, take the account depreciation and expenditures with the use of furniture to be allocated, existing in every administrative unit of the Banco Central do Brasil (headquarters and regional offices). This expense has its cost distributed by the units existing in each location, based on useful area occupied (by square meter). The resources so distributed among all units of the Bank have their cost allocated to divisions based on the number of staff members in each one, and later allocated to activities in the activity module, based on notes of efforts expended by workers (staff members).

Therefore, each resource is allocated to divisions according to the most adequate driver, according to allocation criteria to be used in different situations.

In addition, the resource module includes a special group named specific expenses, of undefined allocation, which are not related to any activity group of units and are therefore allocated directly to specific cost objects.

Activity module

This module is structured into two large groups. The first group comprises specific expenses of cost objects that are not properly activities, but were included in this module observing the assumption that cost objects would only receive resources from activities. These are specific expenses, of undefined allocation, belonging to the resource module. The second group comprises activities identified in each unit of the hierarchical structure and will have their costs driven to cost objects.

The activities receive from the resource module the values referred to its costs, obtained by means of the first stage drivers that distribute resources among activities. After that, the activities have their costs driven to the appropriate cost objects distributed in four levels, described below.

Cost object module

To determine the cost of a cost object, a model was structured in four levels in order to reflect the reality of processes carried out by different administrative units. Cost objects of one unit were defined, for this purpose, as the final services or products resulting from the whole of the unit activities.

The four levels defined by the BCB are in the cost object module, where level 4 is the most disaggregated, receiving costs from activities. Objects on level 3 may receive costs from objects on level 4 and from activities directly related to them, the same occurring to the remaining levels. Cost objects on level 1, the most aggregated among them, represent the Bank macro processes, as shown in the chart below:

	Unit Processes	BCB Processes	Macro activities	Macro processes
Activities	Level 4 cost objects	Level 3 cost objects	Level 2 cost objects	Level 1 cost objects

2.2.2 Cost System Development Phases

After knowing the Banco Central do Brasil's cost model, we describe, in what follows, the phases of resources identification, surveying of activities and identification of cost objects in the four levels defined.

2.2.2.1 Resources survey and analysis

The phase of survey and analysis of resources took place after the survey and analysis of activities carried out by administrative units. For communication reasons, the survey of resources shall be seen first, since they represent the first components of the ABC methodology.

Once the resources are defined, the next step is to relate such resources to the activity that consumes them.

The resources were defined based on the BCB's Plan of Accounts, identifying, for each administrative unit, the accounting groups used.

The Banco Central do Brasil has several computer systems that store data related to different events that took place in the course of its operation. The most relevant of such systems are:

- Human Resources Administration Integrated System;
- Contract Management and Monitoring System;
- Budget System;
- Material Supply and Re-supply System;
- Fixtures and Furniture Control System;
- Travels Control System;
- Accounting System;
- Other low platform systems.

Every system manager met with the KPMG team to inform of the operation of each of them and the way in which data are stored. Concurrently, the Deafi, in charge of the accounting system and preparation of the Bank accounting statements, explained to the implementation group on the systematic of conciliation between values recorded in one specific system and those effectively accounted for in the accounting system, considering that the accounting records are the primary source of cost data.

It is worth stressing that, in assessing costs of activities and cost objects, the use of individual compensation of each staff member was chosen, rather than an average compensation. Personnel expenditures, including social charges and other benefits, are the largest item of resources consumed by the Institution. This is the reason to drive those costs to activities performed through the adoption of an appropriate noting system, able to record the percentage effort expended, indistinctly, by all staff members in the performance of their activities. Such notes drive to activities, in addition to salaries, charges and benefits, the costs related to depreciation of computer equipment used by them, to consumption items used and physical space occupied, among other costs.

The annotation of hours represents a distinctiveness of the BCB's cost model and uses information directly given by staff members, being, therefore, a trustworthy criterion for resource distribution among activities. This detail is a positive factor in the system implemented, since it ensures greater faithfulness in allocating the cost of resources to cost activities and objects. Otherwise, the

allocation of costs of personnel resources would be made by estimation or approximation, with lower accuracy, likewise the use of ABC methodology in other entities.

Another specificity of the BCB's Cost System is the assumption that there are no idle resources. Then, it is assumed that all costly resources in the system are consumed by activities, which, in turn, will have their total costs driven to cost objects. This assumption was used based on the absence, in a first moment, of objective managerial arrangements that could help gauging any existing idleness.

The Cost System also assumed the concept of project to gauge costs, which enabled the Bank to identify expenditures of joint actions temporarily developed by different areas, or actions needing specific measurement. These projects are treated as activities and receive the costs of staff members who carry them out, in addition to other expenditures related to them. Summarizing, one may also know the total cost of each project carried out within the Institution.

Main resource groups

The main resource groups identified by the BCB's Cost System may be summed up as follows:

- General expenses – Expenses with water and sewer, communication services, printing services, copies and replication of documents, purchase of periodicals etc;
- Real estate expenditures – Expenditures with depreciation and use of buildings – common area, depreciation and use of buildings – useful area, maintenance of building facilities, power, refurbishing of buildings etc;
- Furniture, fixtures and equipment expenditures - Expenditures with depreciation of furniture, fixtures and other items;
- Personnel expenditures – Wages, charges and benefits;
- Third party expenditures – Service agreements of different natures, comprising the different areas of the Banco Central do Brasil;

- Money supply expenditures – Building security, building maintenance, equipment maintenance, internal moves of currency, hiring of airplanes, automated processing of bank bills etc.

2.2.2.2 Activity survey and analysis

The activities survey was performed by the team of the consultancy firm based on interviews held with heads of all the BCB's units and divisions.

The interviews also had the purpose of identifying the processes that would be defined as the main functions of administrative units and as level 4 cost objects, the costs of which one intended to know.

The surveyed activities were analyzed by the consultancy team, grouped together and then, one defined the relationships with the respective cost objects, that is to say, with the working processes to which the activities are linked.

An important point to be stressed in the activity survey phase is the conceptual adaptation that was made to meet the Bank specificities, in the sense that, in addition to gauging the cost of activities as envisaged by the ABC methodology, it was possible to measure the cost of different administrative components of the organizational structure.

The flow of cost aggregation in the model adopted by the Banco Central do Brasil may de detailed as follows:

Resources ⇨ Activities ⇨ Unit processes (level 4 cost objects) ⇨ BCB's processes (level 3 cost objects) ⇨ Macro activities (level 2 cost objects) ⇨ Macro processes (level 1 cost objects).

Completed the survey, a total of 3,488 activities were identified, of which 890 are unique activities, that is to say, without taking into account repetition of activities in more than one

division. Such repetitions result from the fact that some activities are performed by different units, as support activities, which are common to different organizational components of the Institution, for representing activities related to the management function. For example, one may mention activities such as logistic support, secretarial and personnel control that exist in every unit of the Bank.

2.2.2.3 Cost objects definition

As already mentioned, the BCB's Cost System model recognizes four levels of cost objects.

Level 1 cost objects are the final products of the Bank's action and are represented by its institutional macro processes, as follows:

(a) Formulation and management of monetary and foreign exchange policies

The main function of a central bank is to level the money supply to the real capacity of the economy in absorbing funds without causing undesirable unbalances. To this end, the Bank controls the expansion of money supply, credit and interest rates in harmony with economic growth and price stability.

Following this idea, the performance of the foreign exchange policy is a monopolistic function of the Banco Central do Brasil related to the domestic issue of money, to the extent that the goal of the foreign exchange policy is to keep the domestic currency stable against foreign currencies.

This level 1 cost object (Formulation and management of monetary and foreign exchange policies) is broken down into level 2 and level 3 costs, as follows:

Level 1 cost object	Level 2 cost object	Level 3 cost object
Formulation and management of monetary and foreign exchange policies	Administration of monetary policy	Operation with securities
		Control of monetary policy
		Disclosure of monetary policy
	Administration of foreign exchange policy	Regulation of foreign exchange policy
		Control of foreign exchange policy
		Disclosure of foreign exchange policy
	Administration of international reserves	Investment of international reserves
		Disclosure of international reserves
	Administration of central government foreign liabilities	
	International relations	

(b) Regulation and supervision of the National Financial System (SFN)

The Banco Central do Brasil's actions aim at improving financial institutions and caring for their liquidity and solvency, pursuing an adequate use of financial instruments, aiming at increasing efficiency of the National Financial System and other institutions authorized to operate by the Bank.

This level 1 cost object (Regulation and supervision of the SFN) may be broken down into levels 2 and 3 cost objects, as follows:

Level 1 cost object	Level 2 cost object	Level 3 cost object
Regulation and supervision of SFN	Regulation	Funding
		Regulating
	Supervision	Supervision
		Administrative processes
		Special regime
	Restructuring the state financial system	

(c) Management of the Brazilian Payment System (SPB) and the Supply of Money

The Banco Central do Brasil is the monopolistic issuer of paper money and coins and performs duties related to money supply as mentioned by Article 164 of the Constitution of the Federative Republic of Brazil and Law 4,595/64.

This level 1 cost object (Management of the Brazilian Payment System and the Money Supply) is broken down into levels 2 and 3 cost objects, as follows:

Level 1 cost object	Level 2 cost object	Level 3 cost object
Management of the Brazilian Payment System (SPB) and the money supply	Administration of SPB	Establishment of SPB directives
		SPB monitoring and assessment
	Administration of money supply	Supplying paper notes and coins to society
		Sanitation of currency
		Regulation and control of money supply

Additionally, five more level 1 macro processes were created:

- Attending to the National Treasury;
- Administration of funds and programs;
- Institutional;
- Pension and benefits;
- Staff members on leave or retired.

This addition was needed so that the Institution could know the amount spent with each of these elements, which shall not be confounded with the previously mentioned macro processes. Attending the National Treasury comprises a set of specific processes performed with the purpose of serving the National Treasury, as well as the Administration of funds and programs. Similarly, knowing in detail the cost incurred by the Bank with staff members on leave or retired was a project demand, since they include, in addition to the benefits and charges paid, the cost of staff members who perform activities aimed at such groups.

Cost objects receive costs only from resources effectively consumed by them, so that if a resource or an activity is included in the cost of a cost object, this is because it was possible to identify and measure the level of contribution by each of them.

Resources and activities consumed by the organization and that were not adequately related to the Bank macro processes, or the consumption of which could not be measured, are totaled in the Institutional cost object. Towards such cost object are also driven resources or activities the expenses of which emerge from corporate needs and that generate benefits to all macro processes indistinctly.

Therefore, the Institutional cost object receives resources common to the organization, the so-called corporative resources such as: depreciation and expenses with the use of common areas of buildings (auditoriums, lobbies, expenses with unoccupied functional residences). There is also a portion of the cost that is considered temporary, since they relate to values of activities and objects of intermediary level with cost drivers that are still difficult to identify with macro processes and other cost objects. It shall be noticed that the value of the Institutional cost object is on permanent reduction since the beginning of the System operation as a result of efforts in reexamining cost drivers. To the extent that the necessary controls are established, cost drivers will become more accurate.

It is worth stressing that all administrative units of the BCB's end-area also perform activities typical of support, that is to say, administrative tasks needed to their operation, but their costs are allocated to cost objects linked to the main objective of the unit existence itself.

It shall be noticed that the flow of costs from activities to level 1 cost objects is not linear regarding the path to be followed. For instance, an activity may be related to level 4 cost objects while not being necessarily driven to level 3 cost, going directly to a level 2, according to the operational reality of each case.

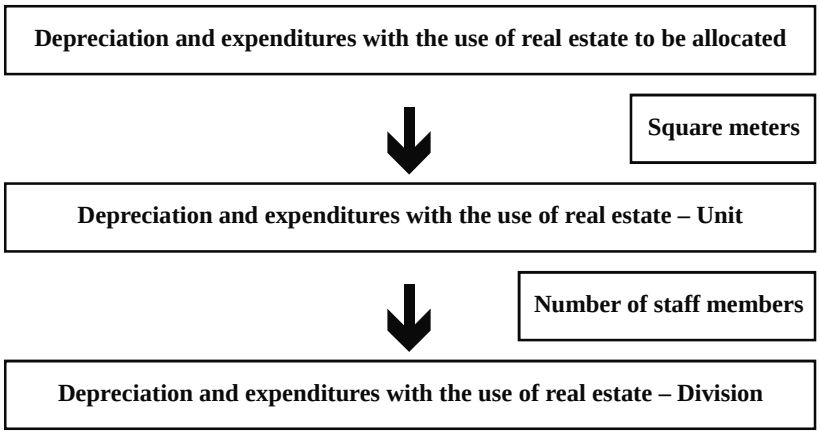
2.2.3 First stage cost drivers

First stage cost drivers are, in the model adopted by the Banco Central do Brasil's Cost System, the criterion selected to allocate the costs of a resource to different activities.

The main cost drivers of a resource to another resource and the cost drivers of a resource to different activities, defined as first stage cost drivers, are listed below.

2.2.3.1 Square meters per unit, branch and building

This cost driver allocates costs of depreciation accounts and other expenditures with real estates to each of the units of the Banco Central do Brasil, in proportion of the total area used (in square meters). Within each unit, the value is further allocated to divisions in proportion of the number of staff members, as exemplified below:



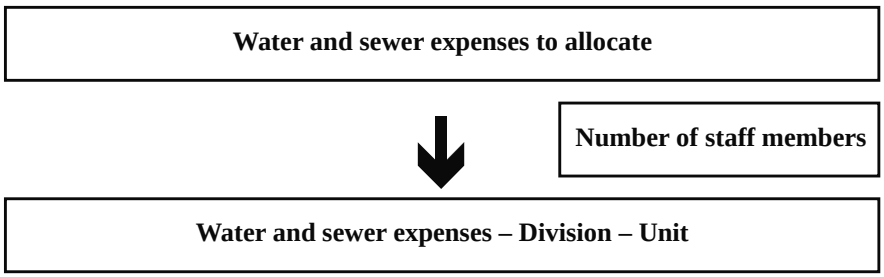
2.2.3.2 Annotation of hours

This cost driver allocates costs of resources to activities, in proportion of the percentage of effort expended by staff members of a division in performing their activities. It is used to allocate resources such as salaries, charges and benefits, materials, hardware, depreciation of furniture and real estate, interns etc., to each of the Bank's activities.

Around 45% of total resources are driven by annotated percentage effort expended by staff members in activities performed, where 40% represent salaries and charges and the remaining 5% represent other resources indirectly allocated.

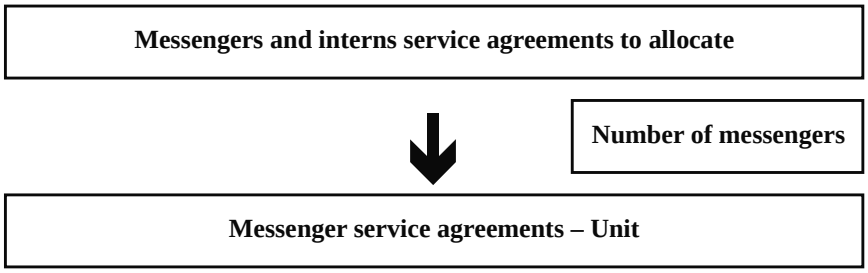
2.2.3.3 Number of staff members by division

This cost driver makes an intermediary allocation of costs of some resources to other resources, based on the number of staff members in each division, such as: water and sewer expenses, depreciation of hardware and personal equipment, consumption materials. The allocation is made in proportion of the number of staff members in each unit of the Bank, as exemplified below:



2.2.3.4 Number of interns and messengers per unit

This cost driver allocates the costs of one resource to other resources based on the number of interns in each unit.



2.2.3.5 Direct allocation of resources

Allocation of the whole cost of a resource to one specific activity. The direct allocation of resources occurs by the existence of specific expenses of undefined allocation, that are entirely driven to specific cost objects, through activities that receive the same name.

2.2.4 Second phase cost drivers

Second phase cost drivers constitute the criterion selected to drive activity costs to cost objects. These cost drivers were established only to allocate the resources of activities to the first cost object to which the activity relates.

In order to facilitate the model maintenance and reducing annotations, the activity structure was assembled so that the majority of activities is linked to one single cost object.

2.2.4.1 Direct allocation of activities

It allocates, in a direct way, the whole cost of an activity to a certain cost object.

2.2.4.2 Annotation of hours

This cost driver allocates costs of one activity to more than one cost object, in proportion of the annotated percentage of effort that has been expended by staff members, when it is noted towards which cost objects a certain activity was performed.

2.2.4.3 Evenly assigned allocation

This cost driver allocates the cost of one activity to cost objects based on the quantity of such objects, that is to say, in the same proportion of the number of destinations.

For example: Management of the Special System of Clearance and Custody (Selic) historic data bank, performed by the Open Market Operations Department (Demab), drives its costs, in equal parts, to level 3 cost objects – Monetary Policy Control and level 1 cost objects – Services to the National Treasury and Management of Funds and Programs.

It is worth stressing that, out of the second level cost drivers used by the System, direct allocation is responsible for the driving of 98% of activities.

2.2.5 Cost drivers among cost objects

The model established four levels of cost objects and defined cost drivers that would be used among cost objects at different levels. Such cost drivers are listed later in this paper.

2.2.5.1 Direct allocation

It allocates, in a direct way, total costs of a cost object to another cost object. This sort of allocation is the most common cost driver in the model.

2.2.5.2 Evenly assigned allocation

This cost driver allocates the cost of one cost object evenly to two or more cost objects based on the number of cost object of destination.

As an example, the level 3 cost objects – Legal, Infrastructure, Planning and Control, among others, that distribute their costs, in equal parts, to level 2 cost objects – Monetary Policy Management and Brazilian Payment System (SPB) Management.

2.2.5.3 Number of staff members by division

This cost driver distributes the cost of a certain cost object to other cost objects in proportion of the number of staff members in each division.

2.2.5.4 Number of staff members by unit

This cost driver distributes the cost of a certain cost object to other cost objects in proportion of the number of staff members in each unit surveyed.

2.2.6 Integrated systems

For this Cost System, the program purchased to calculate cost data was the OROS ANALYTICS, a tool globally used in the development of cost systems that applies the ABC methodology.

2.2.6.1 Information Capture and Consolidation Module

Cost information, coming from different systems of the Banco Central do Brasil, is captured, by interfaces, by the Information Capture and Consolidation Module. This module, in turn, possesses, in addition to interfaces, an annotation module where staff members regularly enter their percentages of hours worked in different activities and, in some cases, also enter percentages to drive activities costs to cost objects. Such cost information is exported to OROS ANALYTICS, where costs are calculated by deputy governor office, unit, division, regional administrative office, activity and cost object.

2.2.6.2 Managerial Information Module

After the calculation of costs, information is exported to the Managerial Information Module, where it remains available for consultation by the BCB's managers. The objective of this module

is to meet the demand for cost-related information posed by the Bank officials.

This module uses a Data Warehouse technology, through the MicroStrategy tool, and makes available for general consultation some predefined reports. The user of such information may tailor his own report, since extraction of data is possible, observed certain parameters. In addition, the tool provides some facilities as: exporting screens to Excel; preparing graphs through a graph manager; displaying data in ascending or descending order; changing the format of the report with inclusion and exclusion of columns; among others.

The basic reports available in the Management Information Module are:

Cost of Resources – By deputy governor office, unit, division and branch;
Cost of Activities – By deputy governor office, unit, division and branch;
Cost of Cost Objects – Cost objects in four levels;
Average Cost of Supporting Activities – By deputy governor office, unit, division, and branch;
Working, Retired and on Leave Staff Members – Cost and number of staff members;
Air Tickets Issued – Cost and number of air tickets issued by deputy governor office and unit;
Travels – Cost and number of tickets by deputy governor office and unit.

The Management Information Module makes available, in addition, specific information/reports on the performance of the BCB's budget (administrative budget and operational budget) and on results of monetary authority typical operations. One of the analytical possibilities offered by the Module is the comparison of support activities, which are typical supporting activities existing in all administrative units of the Bank, against the cost of finalistic activities by deputy governor office, unit and division. From this analysis, one may know the degree in which each unit of the Banco Central do Brasil focuses efforts on its most important duties.

Another relevant analysis, which may be made based on the Management Information Module, is the comparison of the cost of similar activities developed by different units, enabling to gauge the

degree of utilization of resources made available to units in comparable activities.
The Module also enables comparing the cost of certain activities developed by the Bank against the value of services/products offered by other companies or bodies, when such parameters are available and reliable.

Several other information may be obtained, such as:

- Knowledge of all costs involved in projects developed in the Bank;
- Identification of the effective cost of funds and programs administration services, performed by the BCB, enabling the accurate determination of administration fees to be charged.

2.2.7 Communication and training strategy

Before the beginning of the System development, informative and perception presentations were held with the board of governors and heads of units, where the project objects and phases were clarified. Such presentations were conducted by professionals of the consultancy firm retained by the Banco Central do Brasil. The aim was to obtain adherence the BCB's officials to the project, comprising all areas of the Institution. Indeed, the general level of acceptance, especially in the different phases of the project implementation, was well above initial expectations.

2.2.7.1 Communication

The communication plan comprised seminars held by part of the consultancy firm team. In such events, held at the end of each module, the team displayed the results of what had already been done. Such presentations were channeled to deputy governors, heads of units, advisors and the internal project team.

During all phases of the project development, staff members received information on the course of the implementation through some internal communication arrangements available: electronic

mails (channeled to formal communication), informative notes, electronic journal etc., in addition to sectoral meetings held upon demand by different areas of the Bank.

2.2.7.2 Training

As far as training is concerned, the Banco Central do Brasil staff members involved in the process of project development have received initial training on ABC costs and methodology held by *Escola Nacional de Administração Pública (Enap)*, the National Public Administration School. Later, as the work proceeded, the Bank's team that would be in charge of managing the Costs System was specifically trained in the tools used (OROS ANALYTICS and Microstrategy), in sessions held by the consultancy firm, under the System implementation agreement.

In order to publicize the System and clarify the procedures that would be required by units and divisions regarding annotation of hours, staff members received specific training. The training for using the annotation module was held with the assistance of videos containing detailed information on the System and the way to complete the screens for annotations. The videos could be accessed by any staff members through the intranet.

A specific course on the Management Information Module was offered to managers and advisors of the Institution to enable the use of resources and information contained in the module.

Finally, there is information available to all staff members through the BCB'S intranet, comprising texts, studies, publications, reports and presentations, held along the preparation and implementation phases of the project, in addition to the document "What is a Cost and Managerial Information System", containing data on the cost model used by the Banco Central do Brasil.

Following the System implementation, a "Monthly Cost Bulletin" has been made available, containing reports of cost information (resources, activities and cost objects by deputy governor offices and unit), based on data of the past three months. Other reports are also being prepared, as

the “Half-yearly Costs Report”, with its first version analyzing the period from July to December 2003.

2.3 Next steps

As soon as the project was completed, the System started to be improved, as foreseen in its implementation, by a revision of activities and cost objects in all units of the Bank. This procedure shall be frequent, being an important initiative to grant access to those interested on activity cost information that better reflect the dynamic of the work performed.

Another point of improvement, already under way, is a revision of the current allocation to Institutional cost object, with the aim to enable more accurate cost drivers, based on a revision of some criteria. In the project development period, many costs were driven to the Institutional cost object, since time was short to identify more precise/specific criteria allocation.

Regarding the Management Information Module access levels, at first, licenses were granted to staff members in strategic offices. More recently, the level of access is being amplified from time to time, granting access to cost information collected by the System to a larger number of staff members.

In addition to these improvements, the possibility of establishing goals and economicity/performance indices is being studied in order to monitor the performance of several areas, as well as of the organization as a whole, ensuring resource optimization and, hence, institutional efficiency.

3. Final considerations

This chapter succinctly describes the difficulties found in the development and implementation of the Banco Central do Brasil’s Cost System, the lessons learned along the process and, finally, the conclusions of the work.

3.1 Difficulties faced and lessons learned

This section emphasizes the main difficulties and lessons learned during the System development and implementation phases, as caveats and references for similar projects that are to be implemented by other institutions.

The relatively short term allowed for the development of a wide range project such as this one — an initial term of nine months was contractually established and later extended to twelve months – in a large and complex organization as the Banco Central do Brasil, attracted problems, since the large amount of tasks related to the survey of activities, definition of cost drivers and identification of costs objects may have caused some imperfections. An instance of that is the lack of refinement in the definition of some cost drivers – from resources to activities and cost objects – which implied an overvaluation of the Institutional Cost Object. This led the system manager, soon after the project implementation was completed, to promote the tracking of some of these flows in order to redirect expenditures then allocated to the Institutional and to other cost objects.

The reduced term also reflected in the works of the two consultancy firms employed. The concepts and systems consultancy teams worked in parallel in the development of the Cost System. The systems team, who should await the definition of requisites by the criteria team, had to develop the System almost simultaneously to that. To a certain extent, this solution was beneficial to the integration of the two teams, despite the occurrence of reworking in situations where the criteria and concepts had to be changed/included along the process.

Information on the characteristics of the different systems used, initially surveyed, revealed itself inaccurate and outdated along the project. This was due to the fact that the managing areas of that systems gave, at times, insufficient information, largely due, in most cases, to older systems and the retirement of staff members who possess the information, making a satisfactory knowledge of such systems by the current team very difficult.

In terms of operations, the completion of the Information Capture and Consolidation Module – interfaces was hindered by a multiplicity of existing computer technologies and platforms, which delayed the System implementation. There was, in addition, a need to perform changes in some programs of the Information Technology Department (Deinf), so that data collection occurred as defined in the requisites. Besides, there was not a standardization of system development, homologation and operation hardware environment, making room for errors. The introduction of new technologies during the project raised difficulties in its course, such as the case of the data extraction tool ETI, which has not been foreseen at the beginning.

Another obstacle found in the definition, development and implementation of the project relates to the inexistence of previous experiences, with similar characteristics and scope of the model implemented in the Banco Central do Brasil, in Brazilian government bodies and, more specifically, in other central banks and bank supervision authorities.

From another point-of-view, a natural restriction to the full use of the System is the difficulty in assigning cost results to institutional performance goals. This assignment, possibly reflected in the model of individual and team assessments, could promote a more effective use of the Cost System by staff members.

When the unit activities were surveyed, there was an excessive breakdown of activities, which made the managerial treatment of information difficult. Greater time should have been dedicated to the compilation of an activities dictionary. The important, in this phase, is to make the aims of the Cost System absolutely clear. Many areas see the task of surveying activities as a very detailed review of work processes, while in fact the aim is to identify activities to which the cost knowledge and control are relevant in a managerial sense, that is to say, that it is really worth the effort of detailing.

Regarding the form of working among the teams of the external consultancy firm and the Banco Central do Brasil, there was, along the project, sufficient integration. The phases were discussed in meetings held from time to time. Had this integration not occurred, the Bank, immediately after

the expiration of the agreement with the consultancy firm, would not be able to perform the maintenance that took place in months subsequent to the implementation completion, due to lack of specific knowledge. Therefore, commitment of internal teams dedicated exclusively to the project since its beginning is essential to the continuity of systems like this one. Otherwise, technical reliance on third parties would be inevitable.

Indeed, a specific organizational component was established since the beginning of the project implementation, namely the Costs and Managerial Information Consultancy Group, within the structure of the Planning and Budget Department (Depla), reporting to the Deputy Governor for Administrative Affairs, in charge of monitoring the whole development and implementation process, and, subsequently, in charge of the System management. Additionally, a technical team of Deinf was designated to take care of technological maintenance jointly with the Group.

A critical point is the required formulation of specifications regarding the system to be developed. One cannot be overcautious in defining the technological solution to be used, or common mistakes do take place. Such errors may determine limitations in performance, security and trustfulness of information in this type of system. Hence, specification of desired requisites and efficiency and efficacy indexes on procedures is an indispensable phase. When specifying the requisites, one shall avoid selecting solutions (computer products or services) widely used in the market, since the time elapsed from implementation to establishment of specifications may lead to errors in the adoption of determined solutions, due to technological change.

It is only by considering the current situation of information technology existing in the company/entity – and its planned performance at the time of implementation – that one may properly assess the options of solution with the intended requisites. Otherwise, the possibility of error in selecting the better solution available is magnified. An error in selecting a solution, which fails to comply with all requisites desired at the time of implementation, may imply processing problems in the production phase, due to difficulties of integrating several environments of different technologies. Under these circumstances, there is the risk of system continuity, since operational problems that emerge in each cost assessment become intolerable, ruining the

computer processes efficiency and efficacy indexes, implying additional costs to revise what had already been defined.

On the other hand, team training is crucial to a successful system implementation. The team shall be previously trained in the programs and tools that are to be used. Otherwise the acquiring knowledge of such instruments along the project development may cause delays and reworking.

Finally, emphasis shall be given to the efforts of communicating the cost system implementation project in all its phases - concepts, development and implementation – with a view to reduce possible resistances, since the control implied by its operation may cause a natural discomfort to individuals. The provision of information and clarification on this aspect shall be intense and permanent in different levels along the project phases.

3.3 Conclusion

Cost assessment in the public sector constitute not only a legal imperative but also a need to be in tune with the best managing practices widely accepted, which require increasing levels of efficiency and accountability.

Therefore, the initiative of implementing a system to identify and monitor costs, namely with the use of activity cost assessment, is a significant improvement regarding disclosure of information, enabling better decision making by the public management. This makes possible for managers to provide better guidelines for organizational efforts, assigning resources to activities that aggregate higher value to the society.

That is the reason why, more than being a simple cost reduction system, the Banco Central do Brasil's Cost System emphasized the development of tools for managerial support that could enable more rational use of all resources consumed by the Institution, working towards corporative management. As a result of the natural budget restrictions experienced by the Brazilian public sector, one hopes that, with the knowledge of activity costs and consequent

improvement of institutional process management, efficiency gains may happen in the use of scarce resources.

Besides, given the impossibility of granting financial benefits to areas and respective staff members as a reward for cost reduction, contrarily to what occurs in private organizations, the link of the System with resources cutting is broken and substituted by efficiency gains that, by constitutional provision, is a basic principle to be observed in the Brazilian public administration.

Before the effectiveness of the implemented Cost System is fully consolidated and recognized, there is the challenge of making all information generated instrumental in the establishment of internal cost goals and parameters that, jointly with external references enabling reasonable benchmarks, may constitute gauges for performance of different organizational processes – with their respective activities and product/services – as well as of the areas, units and divisions.

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(*) Main publications consulted by the Banco Central do Brasil's internal team up to the project completion, in May 2003.