



Enhancing the G2G Services by Accounting and Financial Management System (AFMIS)

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ABSTRACT

The aim of achieving administrative procedures, as step to implement e-government projects, which are not disrupted by different forms of the media and automatic electronic processes requires changes in the organizational units and the development of complete electronic systems. A number of factors support these changes in terms of the new Public Management with the increasing use of Information Communication Technology (ICT). Accounting and Financial Management Information System (AFMIS) is one of the projects that designed to address three major parts of public finance management reform. They are budget preparation, budget execution and accounting. AFMIS is the main component of the whole modernization project.

Keywords: E-government, Budget, Budget execution, AFMIS, Financial administration.

1. Introduction

The Government of Yemen (GOY) is conducting a Civil Service Modernization Project (CSMP). This comprises, among other components, the computerization of an Accounting and Financial Management Information System (AFMIS). AFMIS is supervised by the Ministry of Finance (MOF) through a Project Implementation Unit (PIU). It is funded by the International Development Agency (IDA) of the World Bank.

AFMIS is designed to address three major aspect of public finance management reform. They are budget preparation, budget execution and accounting. AFMIS is a main component of the whole modernization project. It will accommodate certain agreeable sets of reform steps in the public expenditure process of Yemen, both at the central and local authority levels. The system in its first stage will be rolled out to three large spending units. And ultimately it will be extended to all other governmental spending units.

1.1 Overview of the project and its objectives

AFMIS is designed to address budgetary activities, namely budget preparation, budget execution, and accounting. The system is expected to provide the decision makers with meaningful reports of such activities. In addition, the system would also support capacity building in the area of financial administration in the Ministry of Finance, in the line ministries (all other ministries), in the budgetary units, in the governorates and in the districts. The system should provide greater fiscal transparency by posting approved budgets, allocations and monthly, quarterly, annually budget execution reports on the web of Ministry of Finance. Fiscal transparency will increase as the system incorporates a medium term budgetary

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framework and commitment accounting procedure. Initially, the implementation of the system was divided into three stages:

- First Stage: to implement the system in the largest 4 ministries, which covers about 80% of the total budget. These ministries are the Ministry of Finance, the Ministry of Education, the Ministry of Health and Population, the Ministry of Public Works and Roads. Besides, connecting these ministries electronically an electronic communication between the main center in the Ministry of Finance and the Central Bank of Yemen will be established.
- Second Stage: to deploy the system to all other ministries within the capital of Yemen, Sana'a.
- Third Stage: to deploy the system to all governorates and districts.

The project faced some serious problems, leading to discussions between government and World Bank on the available options, including the closure of the project. The Ministry of Finance made it clear that AFMIS is a strategic reform. Eventually, government and the World Bank have agreed on a set of actions that warrant its success. The past two years have witnessed the implementation of these actions and AFMIS has achieved important milestones. The 2008 budget was fully prepared using the AFMIS system, and the results have been encouraging. The feedback from pilot ministries has been overwhelmingly positive. moreover, the budget execution module has been implemented in the above mentioned four ministries since January, 2008, and these ministries are working live with the system. The project team is working with the contracting company along with independent international testing company to address and resolve all technical comments and/or needs raised by the end-users.

1.2 The contribution of this project to the government's management of public funds and allocations to different government agencies

Automating budget processes will definitely improve the government's management of public funds, by using the system from the start (budget preparation) to the end (budget execution). Each agency or ministry cannot reallocate, transfer or exceed any amount that is not assigned in its budget. Real-Time reports will be issued automatically through the chain of command in the Ministry of Finance for every transaction in any agency or ministry connected in the system; this will help officials to take sound decisions based on these real reports.

1.3 The radical impacts of the computerization of the government's financial system on the government's effectiveness in financial management

Data processing of any activity will revolutionize all aspects of such activity. We are talking about time saving, cost, efficiency etc. When it comes to financial activities these observed advantages are influential and important. It will not only improve operations and save agencies cost, but also it will also have spillover effects on all the organizations and personnels who are involved in public finance. Computerization should result in the efficient and swift delivery of services to the Ministry of Finance and other government agencies, employees, citizens, and businesses. To citizens and businesses, computerization would mean the simplification of procedures and streamlining of the approval process and hence speedy payment system. This should result in lower costs on all the parties involved and would hopefully lead to lower costs of goods and services provided to the government. Computerization would mean ensuring appropriate and timely decision-making as well as appropriate execution of budgets to the lowest level of desegregation.

1.4 The progress in the accounting and auditing systems within government agencies as a step towards computerization

Since 1995, the date of economic reform inception, the Ministry of Finance has played a key role in the reform processes. Economic and financial reform package includes amendments of several financial laws. It also introduces several new others. The Ministry of Finance has introduced a new budget classification

system and a new government chart of accounts. It has also introduced the new government procurement law. Taking reform as a continuous process, the MOF is right now in the process of implementing the Financial Management Reform Strategy that was developed mutually by the Ministry of Finance and donor community. The strategy involves amendments of several financial laws and regulations. The strategy also includes a comprehensive training program of the Ministry of Finance personnel as well as other agencies cadre on “how to adapt to recent changes in the legal framework of the government financial system”.

2. Purpose

The implementation of integrated and full featured Government Treasure System for government accounting and financial management is a key to managing government finances in an efficient and effective manner. The primary objectives of the AFMIS are: i) to record accurately and comprehensively detailed accounting information pertaining to budgetary transaction and ii) to provide a wide variety of users with timely and reliable information. This capability is central to the optimal function of the Ministry of Finance. There are three purposes within these objectives:

- Supporting the day-to-day operations through comprehensive support of business processes.
- Supporting decision making by recording comprehensive accounts and reliable accounting data and providing access to this information,
- Fulfilling obligations regarding stewardship of government money by providing statutory reporting functions.

3. System Context

AFMIS needs to be seen as part of an overall framework for government fiscal management, covering macroeconomic forecasting and management, budget preparation, budget execution, reporting and revenue administration.

3.1 Regulatory Framework

The functional process for the government fiscal operation is governed by a regulatory framework, consisting of a number of different layers. These include:

- The control structure
- The accounting classification and
- The reporting requirements.

It is important that AFMIS complies with the regulatory framework. AFMIS will need to offer sufficient flexibility to enable it to accommodate changes to the regulatory framework, as the public financial management environment in Yemen. It should evolve to embrace both those reforms that are currently envisaged and future reforms. Ideally, the regulatory framework should be reviewed prior to the implementation of the system in the light of the streamlined processes that will be used, for example signature on paper.

3.2 Account Classification

The account classification code structure ensures that transactions are recorded consistently. It facilitates expenditure control, costing, economic and statistical analysis. This is a key element of the AFMIS. It is also used to generate the macroeconomic information on the government financial activities in a timely fashion required for the development of relevant policies.

AFMIS should utilize a standard, government-wide classification code structure to provide a consistent basis for:

- Integrating planning, budgeting and accounting
- Compiling budget allocations and program costs within and across government agencies

- Capturing data at the point of entry throughout the government
- Consolidating government-wide financial information.

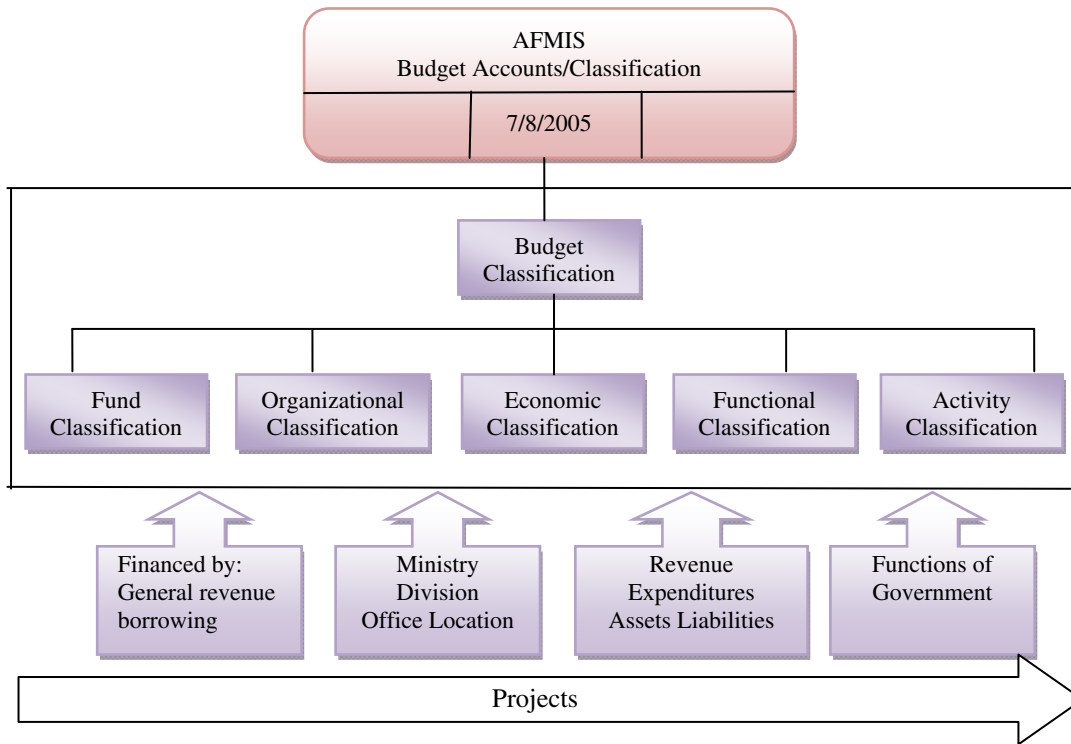


Figure 1: Budget Account Classification Structure.

- **Fund Classification:** This is used to indicate the source of funding, such as revenue, expenditure (Treasury Single Account) special-purpose fund, donor fund, etc.
- **Organizational Classification:** This links the account to a specific organizational unit within the Yemeni Government Structure or within Local Government (LG). This should reflect the existing organizational hierarchy. Ideally, the organizational classification should allow revenues/expenditures to be attributed to individual spending units.
- **Economic Classification:** This shows the breakdown of transaction according to revenue, borrowing expenses and non-financial asset transactions. It is also used for administrative purpose to identify the object of revenue/expenditure, such as current expenditure or used of goods and services or electricity, etc. This is generally the most detailed level of desegregation of revenue or expenditures as it coincides with management control requirements.
- **Functional Classification:** This shows the allocation of transaction to standard functions of government according to the United Nation's COFOG system and the IMF'S GFS. This is used to provide a more detailed and consistent breakdown of transactions according to the objectives of the government.
- **Activity Classification:** This allows transactions to be allocated to specific activities, or sub-activities that reflect specific functions undertaken by the government to meet defined objectives and outputs.
- **Project Classification:** Projects are groups of activities aimed at achieving specific objectives within a limited timeframe.

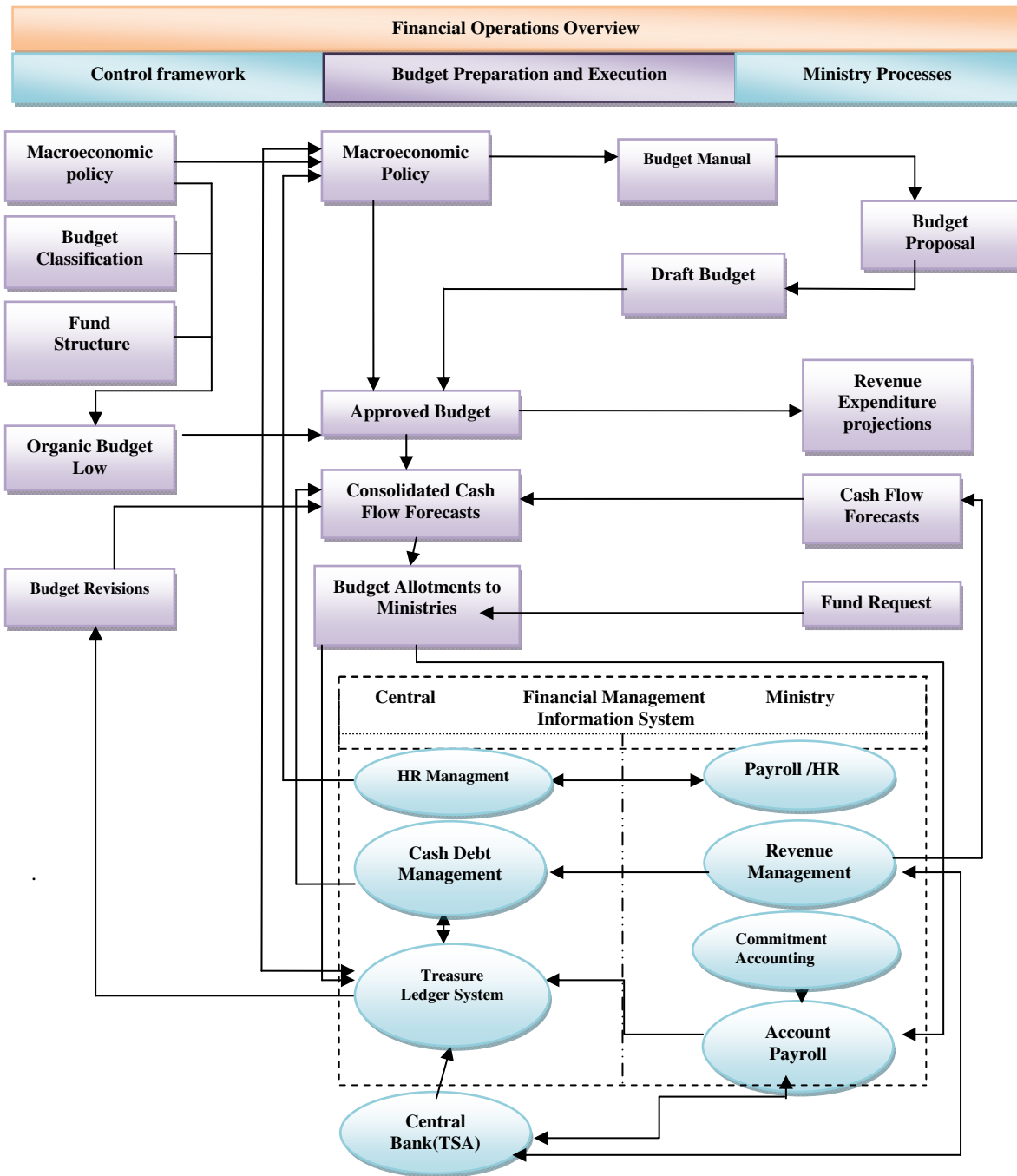


Figure 2: Financial Operations Overview

3.3- Reporting Requirements:

The design of AFMIS needs to meet reporting requirement of two main areas:

- External reporting to meet the needs of the parliament and the public, as well as to comply with

the requirements of international bodies, including donors, overseas investors, and financial markets

- Internal reporting to meet management needs within government and LG for policy makers and managers.

4. Government Financial Operations

The Figure 2 provides an overview of typical government financial operations. The column on the left shows the control framework, the main elements of which have been discussed in Section 2. The central part of the diagram illustrates the high level functions in relation to budget preparations and execution at the central (Ministry of Finance) level. The right-hand column shows the functions undertaken in the line ministries. At the bottom of the diagram is a box representing the core functionality of the typical FMIS system, split between those elements that will be used by the Ministry of Finance and those that will be utilized by the line ministries.

The system utilizes a single database structure for both budget preparation and budget execution. This is shown in the conceptual form in Figure 3. Accounts are accessed using a single key, whether for historical data, current year, budget year, or forward estimates. Access to the individual fields will be controlled by the users' rights on the systems.

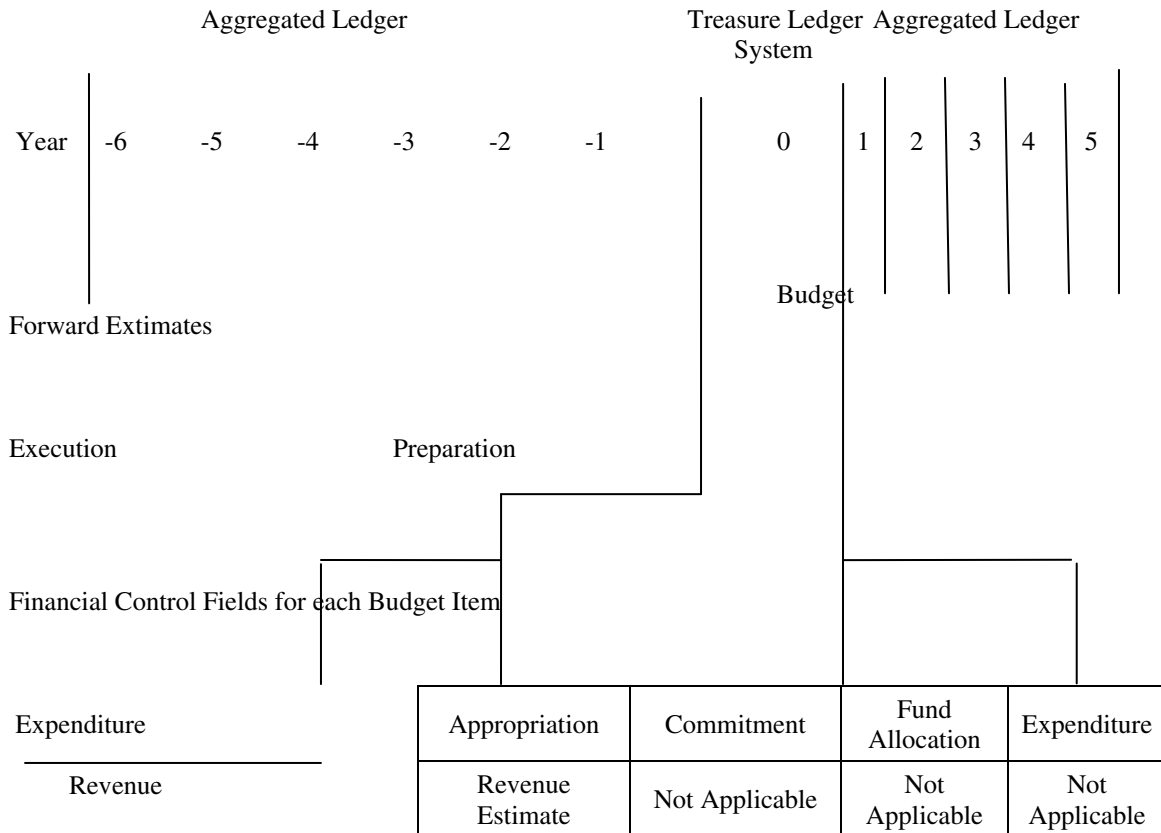


Figure 3: Database Structure

The database will hold different information, depending on which part is being accessed. For example, the historical information stored in the aggregated ledger will contain the final appropriation and the actual amount of the expenditure at the end of fiscal year. The forward estimates will contain estimates of revenue or expenditure. The most detailed information will be held in relation to budget execution.

Overall AFMIS System Architecture

Figure 4 illustrates the overall system architecture for AFMIS. The central, shaded block represents the functionality to be provided by AFMIS. The Systems with which AFMIS will interface are designated by a heavy line.

The main functional processes are:

Record budget appropriations and allotments: Once the annual budget is approved by the parliament, it is loaded into the system by the general register department of the MOF. The approved budget for each line ministry is then broken down to the detailed level of chapter, sub-chapter and economic classification and apportioned overtime. This is registered in the system by the MOF and communicated to the line ministry and LG units. This represents the monthly spending limits for the line ministries and spending units for the fiscal year.

Determine cash requirement and warrant amount: The spending units and line ministries develop detailed financial plans showing projected outlays and receipts each year. During the course of the year, the line ministries prepare requests for funds by the economic category, which are recorded in the system. The MOF then issues warrant to the ministries for each category of spending. Line ministries and governorates issue sub-warrant for their subordinate spending units and advise accordingly. These processes take place periodically throughout the year. The warrant and sub-warrant amounts may not exceed the amount specified in the spending limits for each level of unit. The level of detail in the budget realized is related to the authority delegated to the spending unit to shift funds between items.

Record commitment transaction: During the year, line ministries process request for expenditure. Each spending unit (SU) verifies the appropriateness of the expenditure and the availability of budget and funds, and records the transaction in the system. In case, of regional SUs, these transactions may be recorded through a Regional Treasure Office (RTO). Although this facility is available in AFMIS from the January 2006, it will be activated only if required.

Verify goods receipt and record payment orders: On receipt of the goods, the SU follows the verification procedure and records the payment order. The system verifies that the expenditure is within the relevant spending limit. Once all the relevant checks have been carried out, the authorized official in the SU certifies that payment may be made.

Process payments: Daily batches of the AFMIS transactions are sent to the Central bank of Yemen (or by RTOs to the regional branches of the CBY). The relevant funds and information are sent to the commercial banks where suppliers hold their accounts to credit the appropriate account and debit the government account. The receiving bank and CBY confirm the debits to the government accounts.

Record receipts: Government receipts -taxes, customs duties etc. - are paid into a set of sub-accounts in the CBY. Periodic reports showing relevant details are sent by CBY to the Treasure and to the Tax Authority and Customs Administration for reconciliation.

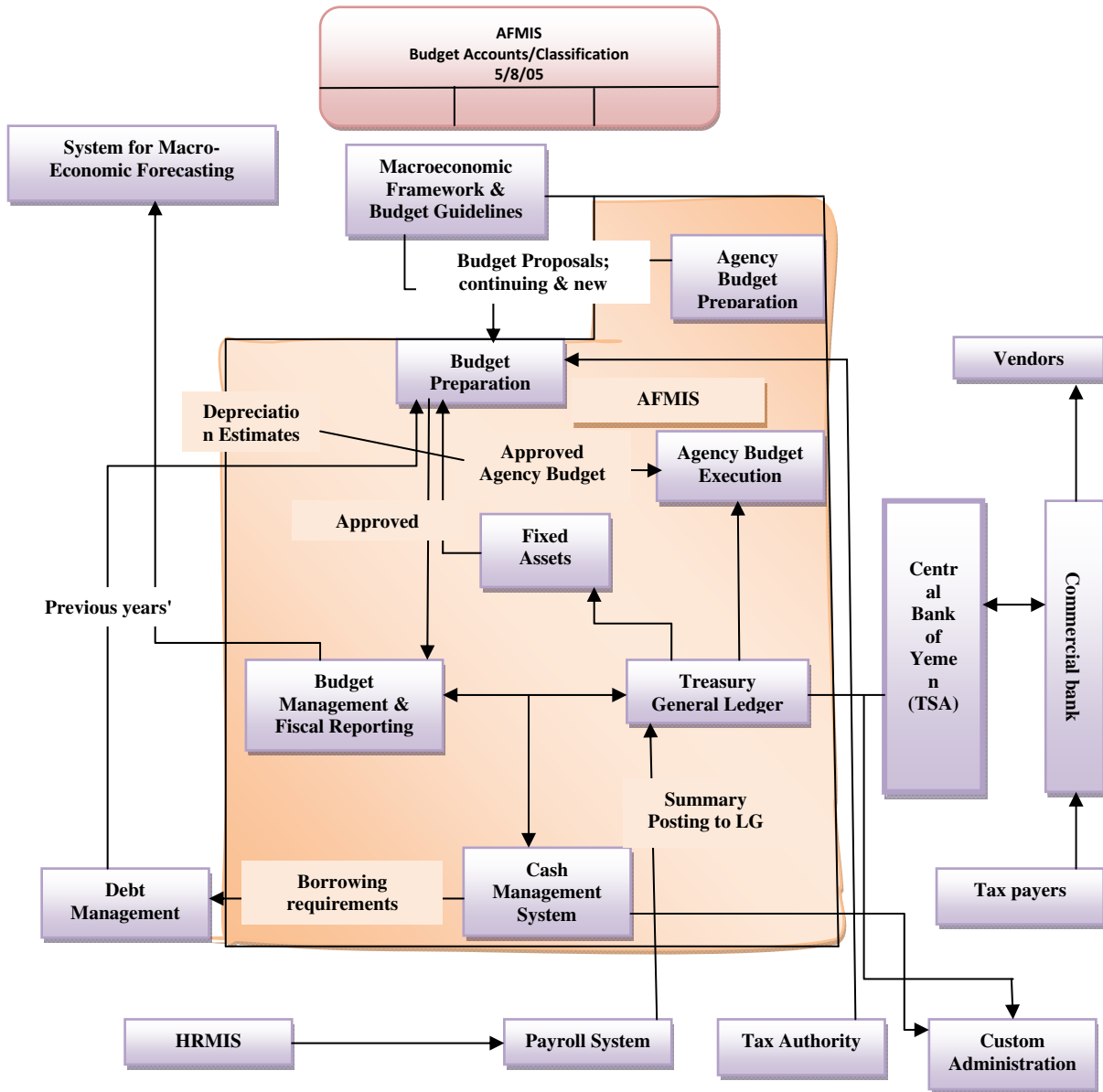


Figure 4: System Architecture for AFMIS

5. Concluding Remarks

Any reform basically aimed at improve business environment. In the financial environment, this should lead to efficiency and prioritization and the better allocation of public funds. It should mean lower cost of goods and services and hence more services and higher coverage of these services. It should mean enhanced transparency and accountability. In this paper, we have discussed how these are achieved in the AFMIS, designed for Yemen government. AFMIS accommodated certain agreeable sets of reform steps in the public expenditure process of Yemen, both at the central and local authority levels. We have also

detailed out the experiences and problems encountered during the system development.

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References

1. Al-Sohybe (2007). Implementation of E-government in Yemen. Retrieved April 15, 2008, from www.afmis.gov.ye
2. <http://web.worldbank.org/wbsite/external/countries/menaext/yemenextn>, last access 1/7/2008
3. Stephen MacLeod (2005). Accounting and Financial Management Information System (AFMIS). Retrieved April 27, 2008, from www.afmis.gov.ye
4. Yemen Government <http://www.yemen.gov.ye/egov-english/index.html>. last access 10/7/2008

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