



EQUITABLE GROWTH, FINANCE & INSTITUTIONS NOTES

Ensuring Better Public Financial Management Outcomes with FMIS Investments

Summary Note

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What Is the Rationale?

A Financial Management Information System (FMIS) plays a central role as the budget management tool of the government, and hence it is key to sound public financial management (PFM). It strengthens budget compliance and fiscal discipline which are necessary for macroeconomic sustainability. The FMIS can also enhance transparency which, in turn, improves accountability. It also contributes towards efficiency in public service delivery. Fiscal discipline, accountability, and efficiency are three fundamental objectives of PFM.

At its core, the FMIS enforces the use of a set of financial controls embedded in the system to ensure that government spending complies with the allocated budget. By restricting spending and commitments to budgetary and allocation ceilings, the FMIS helps the government to stay on track with the fiscal deficit targets necessary for macroeconomic stability. By processing government payments, the FMIS enables the classification, recording, and accounting of financial transactions, which provide the basis for producing in-year budget performance reports and annual consolidated financial statements. If governments have adopted the International Public Sector Accounting Standards – at least the cash reporting standard – and FMIS is used as a basis for producing these statements, the FMIS promotes transparency and financial accountability. Better fiscal controls, adherence to fiscal deficit targets, and improved transparency lay the foundations for enhancing the efficiency and effectiveness of service delivery. Therefore, a well-functioning FMIS is a fundamental benchmark for achieving core PFM outcomes.

However, an FMIS alone is not sufficient. Policy, capacity, and change management are the critical analog complements required for success in optimizing PFM outcomes. There are important lessons in each of these dimensions which, if applied appropriately, could enhance better PFM outcomes in FMIS implementation projects. The *Ensuring Better Public Financial Management Outcomes with FMIS Investments* report synthesizes these lessons from the existing body of diagnostic and analytical work and provides practical and operational guidance for the design, implementation, and operationalization of an FMIS to achieve improved PFM results.

The Case for Improved PFM Outcomes

- Allows citizens to hold government accountable
- Contributes to fiscal discipline; ensures budgetary and commitment control.
- Improves transparency and service delivery

What Major Challenges Exist?

Recognizing these benefits, the World Bank and many donors have already invested significant resources into the procurement and implementation of FMIS. However, implementation of FMIS systems has been operationally challenging—prone to cost and time overruns, and subject to significant political economy issues.

The World Bank has estimated that FMIS projects are completed within seven to fourteen years.¹ The financial costs associated with FMIS projects are significant and typically range from US\$5 million for small countries to US\$100 million or more for mid- to larger-sized countries.

Challenges manifest at every stage of an FMIS project. Implementation is often hampered by a lack of a proper diagnostic before embarking on FMIS reform. The diagnostic is used to assess the PFM performance issues which the FMIS is expected to address. Additional challenges include insufficient consultation across the whole of government, inadequate attention to the business process re-engineering, and the cultural changes that would need to be introduced, among others.

One critical challenge for FMIS projects is the need for sustained government commitment over multiple political cycles. This commitment is necessary to address political economy issues that manifest in many forms. Agency officials and users typically resist system-enabled controls that limit their discretion. Resistance could also be due to legitimate capacity constraints. Vested interests is another challenge. In cases of fraud, FMIS limits the ability to hide the footprints of the perpetrators. Major frauds have been detected and investigated using the information provided by the FMIS, even when the manual paper trails were destroyed or tampered with. In some settings, opportunistic behavior for collusion and corruption with suppliers of hardware and software could manifest as unnecessary increases in scope, addition of new procurements, and delays in contract implementation results, which could intended outcomes.

FMIS specifications is another key area needing attention. When FMIS specifications are not based on a thorough review and agreed business processes, this can create problems in the procurement process and result in delays and higher costs in acquiring and implementing systems. Additionally, systems phasing, sequencing, and deployment are critical elements that shape the implementation strategy. Decision-makers also need to pay sufficient attention to the technical support requirements such as skilled information technology (IT) staff and adequate budget for maintenance and support.

Common Challenges

- Lack of a proper diagnostic to identify deficiencies in FMIS design and implementation to target reforms
- Inadequate government commitment to successfully address political economy issues
- Inappropriate system specifications leading to procurement delays and higher costs
- Insufficient budgetary and technical support for implementation and rollout
- Weak provision for ongoing maintenance and reform
- FMIS projects can be costly, ranging from \$5 million for small countries to \$100 million for medium and large countries.

1. Financial Management Information Systems: 25 Years of World Bank Experience on What Works and What Doesn't: <https://openknowledge.worldbank.org/handle/10986/2297>.

Which Approaches to Solutions Have Proved Successful?

In 2018, the World Bank’s Independent Evaluation Group (IEG) developed a Conceptual Framework for FMIS implementation that illustrates how a systematic approach could lead to improved PFM outcomes. In addition, IEG has also developed a diagnostic framework to assess the effectiveness of a country’s FMIS as a budget management tool. This checklist can be useful in identifying deficiencies in FMIS design and implementation. It can also be used to prioritize and sequence reforms to ensure that the introduction of the FMIS contributes to the broader PFM objectives.

THE CONCEPTUAL FRAMEWORK

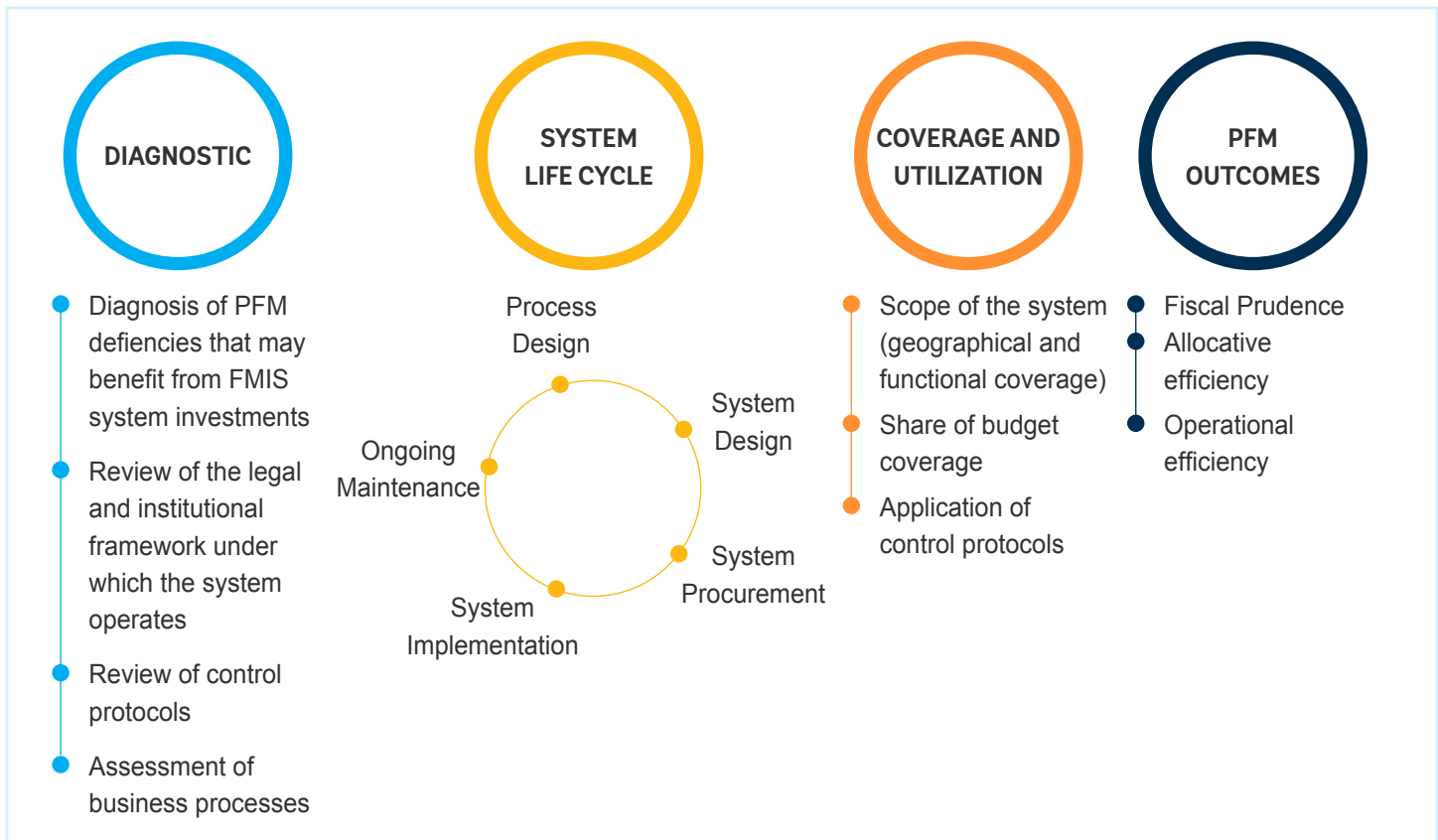
The IEG framework identifies three major dimensions: (i) the diagnostic phase; (ii) the systems development lifecycle; and (iii) coverage and utilization. The framework lists the activities and tasks involved in each stage in a results chain as shown in Figure 1. The effectiveness of the FMIS to improve PFM outcomes depends not only on its technical robustness, but also on the policy and institutional environment. FMIS investments are found to yield the highest returns when the institutional groundwork has been done and the appropriate policies are in place.

The Conceptual Framework for FMIS

- The Diagnostic Phase
- The System Development Life Cycle
- Ongoing Systems Operations and Maintenance
- Coverage and Utilization
- Link with Overall Budget Management Practices
- Requires high-level government commitment through design and implementation

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FIGURE 1 - A Conceptual Framework: From FMIS Diagnostic to PFM Outcomes



Source: Hashim and Piatti-Fünfkirchen (2018).

Before initiating FMIS procurements, the first step is to determine the rationale for implementing an FMIS and identify the problems that the system is intended to solve – the diagnostic phase. This phase can include an assessment of the legal, policy and institutional environment, and any problems that might hinder the effective implementation of the FMIS solution. Policy issues on the adequacy of the chart of accounts and the existence of a treasury single account (TSA) should be considered prior to introducing or upgrading the FMIS. Also, it is vital that FMIS reform is linked to budget management practices. The analysis shows that the effectiveness of a system can be undermined if budget coverage is not comprehensive or if budgetary releases are delayed. Investing in newer technologies or advanced budgeting methodologies, such as program or performance budgeting without improving budget comprehensiveness, credibility, and predictability of budget releases is likely to be only of limited benefit.

A diagnostic can also facilitate stakeholder engagements, generate consensus on the problems the FMIS is trying to address, and build ownership over the reform to be introduced. Institutional mandates for ensuring that a centralized, standardized FMIS is procured, implemented, and used across the government are also important. Human resource policies, for example, may limit the ability of the government for attracting and retaining IT professionals due to lower pay in the public sector. This may lead to a reliance on contractors and short term experts to fill key capacities.

In settings where an FMIS is already operational but producing sub-optimal PFM outcomes, a diagnostic could focus on determining coverage and utilization questions for upgrading and enhancing FMIS. The coverage and utilization questions may reveal a range of gaps. Agencies implementing capital projects and managing extra-budgetary and trust funds could be using standalone financial management systems and not sharing data with the FMIS for financial reporting. Spending units and controllers could be overriding or bypassing commitment controls. Departments within the ministry of finance could be processing fiscal transfers or debt payments without routing them through the FMIS. The agency responsible for payroll processing could be sending payroll information into the FMIS manually, with potential for abuse during the manual intervention. Decentralized agencies of the central government in the regions and districts could be processing payments outside the system due to non-availability of FMIS, lack of electricity, or no internet in offices. Accountant generals or controllers could be reluctant to publish financial statements due to issues with the true and fair presentation.

Leadership and government commitment are critical in addressing these issues. An FMIS project may span a decade and multiple political cycles. Therefore, consistent attention of various cycles of senior management is imperative to increase the likelihood of success. It is important that senior management involvement is formalized in project management structures such as having a minister or permanent secretary actively involved in the governance structure. A steering committee should be established that includes representatives of all major stakeholders. The steering committee can facilitate consensus building, provide policy guidance, and steer strategic direction of the implementation.

APPLICATION SOFTWARE STRATEGY AND OPEN SOURCE

Choosing an appropriate application software strategy for the FMIS is crucial when configuring the technology platform. Options include using custom-developed application software, Commercial Off-the-Shelf (COTS) software packages, or Open Source Software (OSS). Each option has its pros and cons. The applicability of these pros and cons varies with the context, which should be the eventual determining factor for the choice of technology software. Open source software options are now maturing and have expanded the range of options for FMIS implementation. However, open-source does not necessarily mean “free.” While a license fee is not charged for open source, and the license fee for the commercial version of the OSS could be relatively inexpensive, the implementation, configuration, customizations, integration, security, and training-related costs must be considered. Also, the liability for maintaining the software during its operations for issues like security or bugs should not be underestimated and must be considered as part of the risk mitigation strategy. The total cost of ownership for the open-source solution should be compared with proprietary software and COTS solutions during the competitive procurement process. OSS vendors must compete with other package software to ensure value for money.

GovTech, Use of Disruptive Technologies, and FMIS

Disruptive technologies are creating opportunities and challenges for governments around the world. Innovations in the GovTech space, including cloud computing, big data, Artificial Intelligence (AI)/Machine Learning (ML), robotic process automation, and distributed ledger technology, hold tremendous opportunity in transforming government expenditure management. Some examples on the use of disruptive technologies are summarized below:

Disruptive Technologies

- Have potential to accelerate development outcomes in different areas of government activity
- Can leverage the banking network and the use of digital payments
- GovTech's whole-of-government approach maximizes opportunity and reduces risks



BIG DATA AND DATA ANALYTICS: These tools could process large amounts of data from multiple sources, including FMIS and display pre-determined patterns to inform policies. These include geographical distribution of budget execution to identify regional disparities, cost per kilometer of road construction, or cost per child for vaccination – for comparisons across districts, controlling officers, debt accumulation, and capital spending to demonstrate relationship patterns across government tenures and time dimensions.



ARTIFICIAL INTELLIGENCE: AI tools can perform a range of activities, the most notable of which is fraud and corruption. AI tools can create alerts and notify the comptroller/accountant general, and internal audit upon detection of spurious activities: sudden spike in payment activities for a dormant vendor, change in bank account or creation of a new bank account and vendor through exceptionally expedited processes, direct payments on certain goods and services normally not justified for direct payments methods, duplicate invoices with the same vendor or tax identification numbers, or payment of sequential invoices in rapid succession.



ROBOTIC PROCESS AUTOMATION (RPA): These robotic software tools can perform activities like human do. They could log into systems, read data and documents, post transactions, and reconcile information from multiple sources, among others. These steps can configured in these tools in a pre-determined sequence and performed at pre-determined intervals. Governments in USA and UK have established centers of excellence on RPA to harness immense opportunities for creating efficiencies. For example, RPA could be used to enhance governance of state-owned enterprises (SOE). RPA can extract or pull information from multiple data sources like SOE's financial systems and FMIS to post it on the government website in a user-friendly format to promote transparency and citizen engagement. RPA could also be used to improve efficiency of bank reconciliation, which can deepen customer confidence.



CLOUD COMPUTING: This offers immense opportunities to save costs, strengthen cybersecurity, and promote innovation. A large number of emerging and innovative technology solutions are available in cloud for quick adoption. FMIS projects could explore opportunities for migrating FMIS to cloud environment. This could be done as part of the broader cloud policy of the government.

The World Bank's Role in FMIS Reform

Since 1985, the World Bank has committed over US\$1.2 billion to FMIS implementation through 148 operations across 81 countries. Due to the complex procurement, implementation, and rollout procedures World Bank projects have to be realistic during appraisal and choose adequate lending instruments.

Investment lending supplemented with technical assistance has been the main lending instrument type for supporting FMIS and TSA infrastructure. Development policy financing, though underused, can provide critical leverage to address policy reforms and obtain political buy-in. It is important to incentivize countries to adopt measures that would make the FMIS infrastructure investment more effective for budget management through policy actions.

A multiphase approach, or an adjustable program loan might be an attractive option to cater for the medium term. An appropriately phased project could deliver a usable part of the system at the end of each phase, which is necessary to maintain the project's credibility during the long development period.

Adequate costing is important, and FMIS implementation costs vary with the implementation's scope and scale. However, it is possible to estimate FMIS implementation costs with a given scope by using existing data on completed Bank projects. The estimated costs for the World Bank-financed FMIS projects involving implementation of a COTS software is approximately US\$15,000 per user.²

The World Bank has experienced specialists available to advise on important technical issues during the design and implementation phases. The specialists are also familiar with best practices for information technology procurements and the World Bank rules under which they will need to be applied. Continuity of World Bank staff from project design throughout implementation is a crucial success factor.

Ensuring Better Public Financial Management Outcomes with FMIS Investments aims to incorporate new thinking in how Bank teams approach FMIS implementation. The post-COVID-19 world likely would be characterized by greater pressures on budget. According to the [2020 Global Report on Public Financial Management](#) (PFM), countries do better in preparing their budgets than implementing them. Therefore, going forward, it is more important than ever to use new thinking for improved PFM objectives in FMIS implementations. This will help countries achieve greater fiscal discipline, effective tracking of budgetary allocations, and enhanced efficiency in public service delivery. These improved PFM outcomes are fundamental for strengthening the governance of public resources necessary for poverty alleviation and economic growth.

Role of World Bank in FMIS Projects

- Technical assistance and capacity building
- Advisory services on policy and institutional issues
- Convening for sequenced and well-aligned reforms supported by other donors
- Experience in project design and implementation
- \$1.2 billion already provided in financing
- Procurement advice

2. A Handbook on Financial Management Information Systems for Government: A Practitioners Guide for Setting Reform Priorities, Systems Design, and Implementation: <https://openknowledge.worldbank.org/handle/10986/23025>.

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