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Public Financial Management in the Context of Digital Transformation in Vietnam

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Abstract

This article examines the management of public finance in Vietnam in the context of accelerated digital transformation. It argues that digital transformation is no longer a peripheral modernization agenda but a core institutional condition for improving fiscal discipline, strategic allocation of public resources, operational efficiency, transparency, accountability, and citizen-oriented public service delivery. Drawing on a qualitative desk review of legal documents, policy strategies, international public financial management standards, and selected evidence from Vietnam's ongoing reforms, the article develops an analytical framework for digital public financial management and applies it to the Vietnamese case. The analysis shows that Vietnam has established an increasingly comprehensive digital policy foundation, including the National Digital Transformation Program to 2025 with orientations toward 2030, the continuing modernization of the budget and treasury system, the nationwide expansion of e-invoices and digital tax administration, the National E-Procurement System, online public service delivery, and recent data-strategy initiatives within the Ministry of Finance. These developments create significant opportunities for real-time fiscal monitoring,

risk-based control, better integration of budget preparation and execution, improved procurement transparency, automated compliance, and more accessible budget disclosure. However, the article also identifies persistent constraints, including fragmented information systems, uneven data quality, limited interoperability, procedural inertia, cybersecurity and privacy risks, digital capacity gaps across levels of government, and the danger that technology may automate existing institutional weaknesses rather than transform them. The article proposes a reform agenda centered on data governance, whole-of-government interoperability, performance-oriented budgeting, risk-based digital controls, open fiscal data, human resource development, cybersecurity resilience, and responsible adoption of artificial intelligence. The central conclusion is that Vietnam's digital public finance reform will be effective only when technology is embedded in a coherent institutional architecture that links legal rules, data standards, accountability mechanisms, and public value outcomes across the whole public financial management cycle.

Keywords: Public Financial Management, Digital Transformation, Digital Government, State Budget, Fiscal Transparency, e-Procurement, Tax Administration, Vietnam

1. Introduction

Public financial management (PFM) is the institutional machinery through which a state mobilizes resources, allocates them to policy priorities, executes budgets, records financial transactions, manages assets and liabilities, reports fiscal results, and subjects public money to audit and democratic oversight. In countries seeking rapid development, PFM is not simply a technical administrative field; it is the operational core of state capacity. The quality of PFM shapes whether public revenue is collected fairly, whether expenditure reaches intended beneficiaries, whether public investment produces infrastructure and services, whether fiscal risks are recognized early, and whether citizens can trust the use of public resources. In Vietnam, where development objectives increasingly require higher-quality public services, sustainable infrastructure, social protection, environmental resilience, and macro-fiscal stability, the modernization of PFM has become strategically important.

Digital transformation changes the conditions under which PFM is designed and implemented. Earlier waves of public-sector information technology often focused on computerizing discrete procedures, such as accounting entries, payroll records, tax

filing, or procurement notices. Digital transformation is broader. It refers to the reconfiguration of institutions, processes, data flows, organizational capabilities, and accountability arrangements around digital technologies. In a PFM context, this means moving from paper-based, fragmented, ex post, compliance-heavy administration toward connected, data-driven, real-time, risk-based, and service-oriented fiscal governance. The relevant technologies include integrated financial management information systems, electronic tax and customs systems, electronic invoicing, digital procurement platforms, electronic payments, digital identity, data warehouses, cloud infrastructure, application programming interfaces, open-data portals, artificial intelligence, machine learning, and advanced analytics. Yet technology alone does not generate better PFM. Without legal validity, business-process redesign, data standards, internal controls, cybersecurity, institutional incentives, and skilled users, digital systems may reproduce manual fragmentation in electronic form.

Vietnam provides a particularly relevant case for studying digital PFM. The country has pursued administrative reform, fiscal decentralization, public investment management reform, tax modernization, e-government development, and digital transformation at the same time. Decision No. 749/QĐ-TTg approving the National Digital Transformation Program through 2025 with orientations toward 2030 set ambitious objectives for digital government, digital economy, and digital society, including the connection and sharing of national databases related to population, land, business registration, finance, and insurance (Prime Minister of Vietnam, 2020) ^[15]. Vietnam's ranking in the United Nations E-Government Development Index improved to 71st among 193 countries in the 2024 survey, placing the country in the very high EGDI group (United Nations, 2024) ^[18]. Within the public finance sector, the Ministry of Finance has emphasized data, digital platforms, artificial intelligence, big data, and secure public financial information systems as foundations for modernization (Ministry of Finance, 2025a, 2025b). These policy directions create a window for moving beyond procedural digitization toward integrated digital fiscal governance.

At the same time, the Vietnamese PFM system faces complex institutional challenges. The state budget covers multiple levels of government and a wide array of administrative units, public service providers, public investment projects, public assets, extra-budgetary arrangements, and contingent fiscal obligations. The International Monetary Fund's technical assistance on government finance statistics has highlighted issues related to the mapping between state budget balances, treasury and budget management data, and international statistical standards, illustrating the continuing importance of data classification and reconciliation (IMF, 2022) ^[3]. Public investment and procurement reforms require the integration of planning, appraisal, budget allocation, procurement, contract management, disbursement, asset registration, maintenance, and audit. Fiscal transparency requires not only public disclosure but also accessible, timely, comparable, machine-readable, and user-oriented information. These requirements cannot be met by isolated platforms; they require institutional architecture.

The research problem addressed in this article is therefore the following: how can Vietnam manage public finance effectively in the context of digital transformation, and what

institutional conditions are necessary for digital technology to improve PFM outcomes rather than merely accelerate existing procedures? The article focuses on four analytical questions. First, what conceptual relationship links digital transformation and PFM performance? Second, how has Vietnam's legal and policy framework created conditions for digital PFM? Third, where are the major opportunities and constraints across the budget cycle, from revenue administration to budget preparation, budget execution, procurement, accounting, reporting, audit, and disclosure? Fourth, what policy agenda should Vietnam prioritize to build a more integrated, transparent, secure, and performance-oriented digital PFM system?

The contribution of the article is threefold. Conceptually, it frames digital PFM as a socio-technical and institutional reform rather than a narrow technology project. Empirically, it synthesizes Vietnam's current policy trajectory in public finance and digital government, with attention to the whole PFM cycle. Normatively, it proposes a roadmap and policy recommendations for aligning digital transformation with fiscal discipline, allocative efficiency, operational efficiency, accountability, and public value. The article does not present a new econometric dataset; rather, it uses qualitative policy analysis to identify reform priorities and institutional design issues that can inform future empirical studies.

The remainder of the article is organized as follows. Section 2 reviews the literature and develops the conceptual framework. Section 3 explains the methodology. Section 4 examines Vietnam's legal, institutional, and digital-government context. Section 5 analyzes digital transformation across the PFM cycle. Section 6 identifies opportunities, risks, and constraints. Section 7 proposes policy recommendations and a reform roadmap to 2030. Section 8 concludes and suggests directions for future research.

2. Literature Review and Conceptual Framework

2.1 Public financial management as an institutional system

PFM is commonly understood as the set of laws, procedures, institutions, systems, and organizational practices that govern the collection, allocation, use, reporting, and control of public resources. The PEFA framework links PFM performance to three high-level outcomes: aggregate fiscal discipline, strategic allocation of resources, and efficient service delivery (PEFA Secretariat, 2016, 2024) ^[13, 14]. Aggregate fiscal discipline requires reliable macro-fiscal forecasting, credible budgets, commitment controls, cash management, debt management, and comprehensive fiscal reporting. Strategic allocation requires that budget choices reflect policy priorities, medium-term planning, public investment appraisal, performance information, and transparent trade-offs. Efficient service delivery requires that resources flow predictably to spending units, procurement generates value for money, financial controls reduce waste and corruption, and managers have timely information for decision-making.

The institutional character of PFM means that reforms must address incentives, authority, accountability, and information. A budget law may define rules, but implementation depends on the behavior of ministries, provinces, spending units, treasury offices, tax authorities, procurement entities, auditors, contractors, and citizens. A

treasury system may record transactions, but the quality of the data depends on chart-of-accounts design, transaction classification, user compliance, internal controls, and reconciliation. A budget transparency portal may publish documents, but transparency is meaningful only when information is timely, understandable, comprehensive, comparable, and usable. PFM reform therefore requires both formal systems and informal capacities.

Vietnam's PFM modernization can be interpreted through this institutional lens. The 2015 State Budget Law strengthened budget transparency, medium-term budget planning, and public disclosure, while the State Budget Law No. 89/2025/QH15 continues to reshape budget management for the 2026 budget year. Public investment and procurement laws define decision-making authority, appraisal requirements, disclosure obligations, and accountability mechanisms. These legal reforms provide necessary foundations, but they do not automatically produce integrated fiscal management. The effectiveness of reform depends on whether legal rules are embedded in information systems and whether digital systems reinforce fiscal discipline, transparency, and accountability rather than only serving as electronic repositories.

2.2 Digital transformation and digital public financial management

Digital transformation differs from simple digitization. Digitization converts analog information into digital form, such as scanning paper documents. Digitalization uses digital tools to improve existing processes, such as electronic filing or online procurement notices. Digital transformation redesigns processes, institutions, and services around data and technology. In PFM, this distinction is crucial. A scanned budget document may increase availability, but it does not change planning behavior. An online form may reduce transaction costs, but it does not necessarily improve fiscal discipline. A fully integrated digital PFM architecture can change the operating model of government by linking policy planning, budget ceilings, procurement plans, commitments, cash releases, payments, accounting, asset records, performance indicators, and audit trails.

International guidance increasingly emphasizes that digital PFM systems should be evaluated according to their contribution to PFM outcomes. The IMF's digital solutions guidelines for PFM highlight the importance of legal frameworks that support digital records, open data, e-archives, interoperability, internal control, cybersecurity, reporting, and the reuse of primary source data (Rivero del Paso *et al.*, 2023) ^[17]. The World Bank's GovTech agenda similarly treats digital public administration as an integrated approach involving core government systems, service delivery, citizen engagement, and enabling institutions (World Bank, 2023). A well-designed digital PFM system should thus perform several functions: it should provide reliable source data; enforce budget rules; automate routine controls; flag risks; enable data exchange; support managerial decisions; generate fiscal reports; facilitate audit; and disclose fiscal information to citizens.

The literature on integrated financial management information systems (IFMIS) is instructive. IFMIS projects often promise stronger expenditure control, faster reporting, reduced arrears, better cash management, and improved transparency. However, international experience shows

mixed results. Some systems succeed in stabilizing budget execution and improving reporting, while others become expensive transaction-processing platforms with weak analytical value. Common causes of weak results include insufficient business-process reform, inadequate chart-of-accounts design, lack of integration with payroll and procurement, poor change management, fragmented donor or vendor-driven platforms, weak cybersecurity, and limited user capacity. These lessons are relevant for Vietnam as the country moves from platform deployment toward data-driven governance.

Digital PFM is also shaped by the broader digital-government ecosystem. Digital identity enables authenticated access to public services and secure transactions. Interoperability platforms allow databases to exchange information. Cloud infrastructure can improve scalability but requires clear data security and sovereignty arrangements. Open-data policies allow civil society, researchers, firms, and the media to reuse public fiscal information. Data protection rules define how personal and sensitive data may be processed. Cybersecurity arrangements protect financial systems from disruption and manipulation. Consequently, digital PFM cannot be confined to the Ministry of Finance alone; it requires coordination across the government, including agencies responsible for planning, investment, procurement, civil service management, public security, information technology, audit, parliament, and local governments.

2.3 A conceptual framework for Vietnam

This article uses a conceptual framework that links three layers: digital inputs, institutional transformation, and PFM outcomes. Digital inputs include information systems, data standards, digital identity, cybersecurity tools, analytics, electronic payments, and digital service interfaces. Institutional transformation includes legal validity of digital records, process redesign, inter-agency coordination, data governance, internal control modernization, capacity development, and accountability arrangements. PFM outcomes include fiscal discipline, strategic allocation, efficient service delivery, transparency, integrity, citizen trust, and resilience. The key proposition is that digital inputs improve outcomes only when mediated by institutional transformation.

For example, an e-procurement system can increase transparency by publishing tender information, but value for money improves only when procurement planning is linked to approved budgets, bidders have equal access, evaluation criteria are enforced, contract performance is tracked, sanctions are applied, and data are analyzed for red flags. Similarly, e-invoices can improve tax compliance, but revenue performance depends on risk-based audit, taxpayer services, data matching, legal enforcement, and integration with payments and business registries. Budget portals can improve transparency, but only when information is timely, machine-readable, complete, and understandable. The framework therefore avoids technological determinism. Technology is necessary, but it is not sufficient.

The framework also recognizes risks. Digitalization can increase speed without improving quality. It can make errors more systematic. It can create new vulnerabilities to cyberattacks, data breaches, vendor lock-in, algorithmic bias, and exclusion of users with limited digital capacity. It can centralize data in ways that improve oversight but also

generate privacy and governance concerns. It can produce excessive faith in dashboards while underlying data remain incomplete or inconsistent. A mature digital PFM strategy must therefore combine innovation with safeguards, including human oversight, legal accountability, data-quality assurance, external audit, and public scrutiny.

Table 1: Analytical framework for digital public financial management

Layer	Core components	Institutional requirement	Expected PFM outcome
Digital infrastructure	IFMIS, treasury systems, e-tax, e-procurement, digital payments, databases	Reliable connectivity, system security, interoperability standards	Faster processing and more complete fiscal data
Data governance	Chart of accounts, master data, metadata, data quality rules, data sharing protocols	Clear ownership, classification standards, privacy and retention rules	Comparable, timely and reusable fiscal information
Process transformation	Budget preparation, execution, procurement, accounting, reporting, audit workflow redesign	Legal validity of digital records and revised administrative procedures	Reduced duplication, stronger controls and better managerial decisions
Accountability and transparency	Open budget portal, audit trails, red-flag analytics, citizen feedback channels	Public disclosure rules, external audit access, user-friendly reporting	Improved integrity, participation and public trust
Advanced analytics	AI, machine learning, predictive models, risk scoring, scenario simulation	Ethical rules, human oversight, explainability and model validation	Risk-based fiscal governance and proactive policy response

3. Methodology

This article adopts a qualitative desk-review methodology. The purpose is not to estimate a statistical causal relationship between digital transformation and fiscal outcomes, but to interpret Vietnam's public finance reform trajectory and identify institutional conditions for effective digital PFM. The desk review covers three categories of materials. The first category is legal and policy documents, including the National Digital Transformation Program, state budget legislation, public investment and bidding legislation, Ministry of Finance digital and data initiatives, and digital-government policy documents. The second category is international guidance and diagnostic frameworks, especially the PEFA framework, IMF technical guidance on digital PFM, World Bank GovTech materials, and international literature on fiscal transparency and financial management information systems. The third category is publicly available information on Vietnam's digital-government progress, e-government rankings, e-invoice expansion, budget disclosure, e-procurement, and government finance statistics.

The analysis proceeds in four steps. First, it constructs a conceptual framework linking digital transformation to PFM outcomes. Second, it maps Vietnam's policy and

institutional context. Third, it examines the PFM cycle and identifies how digital tools can improve or constrain each stage. Fourth, it develops recommendations for Vietnam's public finance sector to 2030. The methodology is interpretive and policy-oriented. It is suitable for generating reform hypotheses and institutional design recommendations, but it has limitations. The article does not use confidential administrative microdata, does not evaluate the technical performance of each government system, and does not conduct interviews with officials or users. Future research should supplement this analysis with system-level data, stakeholder interviews, subnational case studies, and empirical measurement of the effects of digital systems on budget execution, procurement performance, tax compliance, and transparency outcomes.

The article treats public finance reform as a whole-of-cycle issue. This is important because weaknesses often arise at the interfaces between systems rather than inside a single platform. For example, a budget-preparation system may produce approved allocations, but procurement plans may not be generated from those allocations. A procurement system may record contract awards, but contract commitments may not be automatically reflected in treasury cash plans. A treasury system may record payments, but asset registers may not be updated after capital expenditure. A budget disclosure portal may publish annual documents, but citizens may not be able to track project progress. By analyzing these interfaces, the article aims to move from platform-by-platform description to system-wide reform logic.

4. Vietnam's Public Finance and Digital Transformation Context

4.1 Legal and policy foundations

Vietnam's digital PFM agenda is rooted in a broader national strategy for digital transformation. Decision No. 749/QĐ-TTg, issued in 2020, articulated a vision of Vietnam as a stable and prosperous digital nation by 2030 and set objectives for digital government, digital economy, and digital society. The decision called for work files to be processed in the cyber environment, national databases to be connected and shared, and finance-related databases to become part of the e-government foundation. It also required ministries and localities to integrate digital transformation into their plans and report implementation results annually (Prime Minister of Vietnam, 2020) [15]. For public finance, this matters because budget management depends on the availability and exchange of data across administrative levels, sectors, projects, taxpayers, vendors, and beneficiaries.

The legal framework for budget management has also evolved. The State Budget Law of 2015 provided a structure for budget formulation, execution, accounting, audit, settlement, supervision, and public disclosure. The 2025 State Budget Law, which replaces the earlier framework from the 2026 budget year, continues the focus on disclosure and supervision and is expected to operate in a more digital administrative environment (National Assembly of Vietnam, 2025) [10]. From a digital PFM perspective, budget law is important because it defines the fiscal calendar, authority, classification, reporting obligations, and disclosure requirements that information systems must support. Digital systems cannot be designed effectively if legal rules and digital workflows diverge.

Public investment and procurement laws provide another foundation. Public investment management requires project identification, appraisal, prioritization, medium-term planning, annual allocation, disbursement, monitoring, evaluation, and final settlement. Procurement law governs the selection of contractors and investors, the publication of bidding information, complaints, sanctions, and supervision. The 2023 Bidding Law recognizes the importance of the Vietnam National E-Procurement System and assigns state management responsibilities for information systems and national databases on contractors and investors (National Assembly of Vietnam, 2023) [8]. These legal provisions are directly relevant to fiscal integrity because procurement is a major channel through which public expenditure is converted into goods, works, and services.

The recent policy direction also emphasizes data as a strategic asset. The Ministry of Finance's Data Strategy to 2030 frames finance-sector data as a driver of reform, public financial governance, and service quality. Ministry communications on digital finance platforms mention the integration of artificial intelligence, blockchain, and big data into public financial management, public asset management, taxation, and customs (Ministry of Finance, 2025a, 2025b). These initiatives signal a shift from transaction processing toward data-centered governance. Yet the challenge is to ensure that advanced technologies are introduced after the foundations of data quality, interoperability, legal accountability, and cybersecurity are sufficiently mature.

4.2 Institutional architecture of digital PFM

Vietnam's digital PFM architecture includes multiple systems and agencies. The Ministry of Finance plays a central role in state budget management, taxation, customs, treasury operations, public assets, accounting, auditing standards, and financial data. The State Treasury operates payment, accounting, and treasury-related systems. Tax authorities manage electronic tax filing, electronic invoices, taxpayer databases, and risk management. Customs authorities operate digital customs clearance and trade-related revenue systems. Public procurement operates through the national e-procurement platform. Planning, investment, sector ministries, provincial governments, public service units, state audit bodies, and legislative institutions also produce and use fiscal data. Digital transformation therefore involves a network of institutions rather than a single ministry-owned platform.

The complexity of this architecture generates both opportunities and coordination problems. The opportunity lies in the possibility of building end-to-end fiscal information chains. A public investment project can be linked from planning and appraisal to budget allocation, procurement, contract execution, disbursement, asset creation, maintenance, and performance evaluation. A taxpayer's electronic invoice data can be linked to tax returns, payments, business registration, customs declarations, and risk-based audit. A local government's budget execution can be connected to treasury payments and public disclosure portals. If these links are reliable, policymakers can move from periodic reporting to continuous fiscal intelligence.

The coordination problem is that agencies often develop information systems according to their own mandates, budgets, data definitions, and operational priorities. Even when each system is technically functional, the overall

architecture may remain fragmented. Fragmentation can appear in different charts of accounts, inconsistent project codes, different vendor identifiers, multiple taxpayer or organization identifiers, incompatible data formats, weak application programming interfaces, and unclear responsibilities for data correction. In PFM, such fragmentation is costly because fiscal management depends on consistent classification and reconciliation. A transaction is not merely a payment; it is also linked to a budget line, program, project, procurement contract, supplier, economic classification, administrative unit, location, asset, and policy objective.

4.3 Vietnam's digital-government progress and implications for public finance

Vietnam's progress in digital government provides an enabling environment for digital PFM. The improvement in the United Nations E-Government Development Index indicates advances in online services, telecommunications infrastructure, and human-capital dimensions. National digital transformation reports also point to expanding online public services and increasing use of digital platforms in administrative interactions. In the public finance sector, electronic tax services, e-invoices, e-procurement, digital customs, online budget disclosure, and digital public service payment channels are tangible components of this transformation.

The implication is that citizens and firms increasingly expect public finance interactions to be digital, convenient, and transparent. Taxpayers expect online registration, filing, payment, invoice processing, guidance, and dispute handling. Suppliers expect procurement notices, bidding documents, submissions, contract awards, and complaint mechanisms to be accessible online. Citizens expect budget information, public investment projects, fees, charges, social spending, and service quality to be disclosed in accessible formats. Public managers expect dashboards, early warnings, and integrated reports. These expectations create pressure for public finance agencies to redesign services around users rather than administrative silos.

However, a user-oriented digital PFM model must not sacrifice control. Public finance systems manage sensitive information and high-value transactions. They must protect taxpayer data, supplier data, payroll information, social benefit data, budget security, and payment integrity. They must also prevent fraud, collusion, cyber manipulation, unauthorized access, and data leakage. The challenge is therefore not only to increase digital access but to combine access with trust, resilience, and accountability.

5. Digital Transformation Across the Public Financial Management Cycle

5.1 Revenue administration: from electronic compliance to data-driven risk management

Revenue administration is often one of the most visible areas of digital public finance reform. Electronic tax filing, electronic payment, electronic invoicing, taxpayer portals, risk engines, and data matching can reduce compliance costs, widen the tax base, improve audit selection, and increase fairness. Vietnam's nationwide deployment of e-invoices has become a major pillar of tax administration modernization. Reports on national digital transformation noted rapid expansion of e-invoices generated from point-of-sale systems, and tax authorities have emphasized

electronic invoice database analysis as a step in modernizing tax administration (Ministry of Information and Communications, 2024; General Department of Taxation, 2023) [6, 2].

The public finance value of e-invoices goes beyond replacing paper invoices. If designed well, e-invoice data can support real-time monitoring of transactions, detect under-reporting, identify suspicious chains of invoices, match purchases and sales, support value-added tax control, and reduce opportunities for false invoices. Combined with business registration data, customs data, bank payment data, and taxpayer history, e-invoices enable risk-based compliance management. This can improve fairness because honest taxpayers face fewer unnecessary inspections, while high-risk cases receive more focused attention. It can also improve revenue forecasting because tax authorities receive more timely information about economic activity.

Yet the transition from electronic compliance to data-driven risk management is institutionally demanding. First, data quality must be controlled at the point of creation. If invoice descriptions, taxpayer identifiers, product codes, or transaction dates are inconsistent, analytical value declines. Second, risk models must be transparent enough to guide enforcement without creating arbitrary treatment. Third, data integration must respect privacy, confidentiality, and legal limits on data sharing. Fourth, small household businesses and micro-enterprises may face capacity constraints, requiring support, simplified interfaces, and proportionate compliance rules. Finally, tax digitalization should be linked to taxpayer services. A digital tax administration that only increases surveillance without improving guidance, dispute resolution, and convenience may reduce trust. The public value of digital revenue systems depends on the balance between enforcement, service, fairness, and rights protection.

5.2 Budget preparation and medium-term planning

Budget preparation is the stage at which policy priorities are translated into resource allocations. Digital transformation can improve this stage by integrating macro-fiscal forecasts, revenue projections, medium-term expenditure ceilings, sector strategies, program classifications, public investment plans, recurrent cost implications, and performance indicators. In a traditional budget process, ministries and local governments may submit requests through fragmented spreadsheets and narrative documents. A digital budget-preparation system can standardize submissions, enforce ceilings, capture justifications, compare alternatives, document revisions, and generate reports for decision-makers.

For Vietnam, the importance of this function is heightened by the need to align annual budgets with medium-term financial plans, public investment priorities, socio-economic development objectives, climate and green-growth commitments, and social-policy obligations. Digital systems can support better prioritization by linking budget proposals to policy objectives and past execution. They can also improve fiscal discipline by making budget ceilings visible and enforceable. If ministries propose new policies, a digital system can require cost estimates, legal basis, expected outputs, and future-year fiscal impacts. Such functions are especially important when public resources are constrained

and development demands are expanding.

However, digital budget preparation will improve allocation only if the budget classification and program structure are meaningful. If budgets are primarily organized around administrative units and input categories, digital systems may make it easier to compile budgets but not necessarily easier to evaluate policy trade-offs. A more strategic approach requires program information, performance indicators, project codes, location codes, gender or climate tags where appropriate, and links to public investment and procurement plans. Vietnam's next stage of reform should therefore consider the development of a digital budget architecture that links administrative, economic, functional, program, project, geographic, and performance dimensions. This would allow policymakers to ask not only how much is spent, but for what purpose, in which location, through which project, for which beneficiaries, and with what results.

5.3 Public investment management

Public investment management is a decisive area for Vietnam's development because infrastructure quality, urbanization, climate resilience, transport connectivity, health facilities, education infrastructure, and digital infrastructure all depend on effective investment planning and execution. Digital transformation can improve public investment management by creating a unified project database from identification to final settlement. Such a database should include project proposals, appraisal documents, investment decisions, cost estimates, funding sources, medium-term and annual allocations, procurement packages, contract milestones, disbursements, physical progress, environmental and social information, asset handover, maintenance obligations, and evaluation results.

The absence of integrated project data can produce familiar problems: projects may be approved without realistic funding, cost overruns may be detected late, disbursement may lag behind plans, procurement delays may interrupt implementation, and completed assets may not be adequately recorded or maintained. A digital public investment platform can support fiscal discipline by preventing commitments beyond approved ceilings. It can support allocative efficiency by comparing projects against strategic criteria. It can support operational efficiency by monitoring bottlenecks in appraisal, land clearance, procurement, contract execution, and disbursement. It can support transparency by enabling citizens to follow project status and budgets.

In Vietnam, the institutional challenge is to connect public investment systems with budget, procurement, treasury, and asset systems. Public investment decisions should generate project identifiers that remain stable across the entire life cycle. Procurement packages should reference those identifiers. Treasury payments should be linked to contracts and physical progress. Asset registers should update when projects are completed. Audit institutions should be able to trace transactions and documents electronically. Without these links, digitalization may remain compartmentalized. The long-term objective should be an end-to-end public investment information chain that reduces duplication and improves accountability for both financial and physical results.

5.4 Budget execution, treasury operations and cash management

Budget execution is where fiscal plans become transactions. Digital systems in treasury operations can enforce budget appropriations, commitment controls, payment authorization, cash releases, accounting entries, and reporting. Vietnam's Treasury and Budget Management Information System (TABMIS) has played an important role in modernizing budget execution and accounting. The IMF's technical assistance on government finance statistics reviewed the mapping of TABMIS data and state budget balances to international standards, showing both the value of system data and the continuing need for classification alignment and reconciliation (IMF, 2022) [3].

Digital budget execution can improve fiscal discipline in several ways. Commitment controls can prevent spending units from entering obligations beyond available budget. Cash forecasting can reduce idle balances and payment delays. Electronic payments can reduce manual handling and improve audit trails. Real-time dashboards can show execution rates by ministry, province, program, project, and economic classification. Automated alerts can identify unusual payments, duplicate vendors, late invoices, or over-commitment risks. These functions are especially valuable when governments need to respond quickly to shocks while maintaining control.

The next reform frontier is not only transaction processing but cash and commitment intelligence. A digital treasury should be able to integrate revenue inflows, expenditure commitments, debt service, public investment disbursement schedules, and cash balances. It should support short-term cash forecasting and coordination with debt management. It should distinguish between budget authorization, commitment, verification, payment order, payment execution, accounting recognition, and reporting. It should also provide timely data to policymakers without compromising control. This requires disciplined use of the chart of accounts, master data, electronic workflow, and reconciliation procedures.

5.5 Public procurement and contract management

Public procurement is one of the areas where digital transformation can most directly enhance transparency, competition, and value for money. Vietnam's National E-Procurement System provides a platform for online bidding and publicization of procurement information. The 2023 Bidding Law assigns responsibilities for building and managing the Vietnam National E-Procurement System, managing national databases on investors and contractors, and disclosing information on contractor and investor selection (National Assembly of Vietnam, 2023) [8]. These provisions make e-procurement a central pillar of digital PFM rather than a separate administrative tool.

The benefits of e-procurement are significant. Publishing procurement plans and tender documents can reduce information asymmetry. Electronic submission can lower participation costs for firms outside major cities. Standardized forms can reduce discretion. Digital audit trails can help oversight agencies reconstruct decisions. Data analytics can detect red flags, such as single-bid contracts, repeated awards to the same supplier, short bidding periods, abnormal bid patterns, contract splitting, excessive amendments, or delayed completion. If procurement data are linked to budget and treasury systems, authorities can

compare planned procurement, awarded contracts, commitments, payments, and outputs.

However, procurement digitalization can also create risks if not accompanied by institutional safeguards. Online platforms may improve transparency of notices while collusion persists outside the system. Evaluation criteria may remain complex or discretionary. Data may be published in formats that are difficult to analyze. Contract implementation may be less transparent than contract award. Smaller firms may still face capacity barriers. Cybersecurity failures could disrupt procurement or expose sensitive commercial information. Therefore, Vietnam should treat e-procurement reform as a full procurement-cycle reform: planning, tendering, evaluation, award, contract management, delivery, payment, complaint handling, sanctions, and open contracting data. The strongest digital procurement systems are those that allow oversight not only of who won a contract but also of whether the contract delivered value.

5.6 Public assets, debt and fiscal risk management

Digital transformation in public finance should also cover public assets, public debt, contingent liabilities, and fiscal risks. Public assets include land, buildings, infrastructure, equipment, natural resources, financial assets, and assets held by public service units and state-owned entities. Digital asset registers can improve accountability by recording ownership, location, valuation, condition, use, transfer, disposal, and maintenance needs. When connected to public investment and accounting systems, asset registers can ensure that capital expenditure results in recognized public assets and that maintenance responsibilities are budgeted. This is particularly important in infrastructure-intensive economies, where poor asset maintenance can create hidden fiscal costs.

Debt management and fiscal risk management also benefit from digital tools. Debt databases can record borrowing terms, repayment schedules, currency and interest-rate exposure, guarantees, on-lending, and contingent obligations. Scenario analysis can estimate the fiscal impact of exchange-rate movements, interest-rate changes, revenue shocks, natural disasters, or state-owned enterprise liabilities. Integration with budget and cash management allows debt-service forecasts to inform cash plans. Public disclosure of debt data supports market confidence and fiscal transparency. However, debt and fiscal-risk data are sensitive; they require accuracy, confidentiality, and strong analytical capacity.

Vietnam's digital PFM reform should therefore avoid an overly narrow focus on annual budget transactions. Sustainable public finance requires an integrated view of stocks and flows: revenues, expenditures, commitments, arrears, cash balances, assets, liabilities, guarantees, and fiscal risks. Digital systems can make these relationships visible. But this requires common identifiers, accrual-aware information where appropriate, reliable asset valuation methods, and clear rules for fiscal-risk reporting.

5.7 Accounting, reporting, government finance statistics and fiscal transparency

Accounting and reporting are the information backbone of PFM. Digital transformation can increase the timeliness, accuracy, and accessibility of fiscal reports. At a minimum, digital systems should generate budget execution reports,

financial statements, debt reports, procurement reports, public investment reports, and disclosure materials. More advanced systems should allow users to drill down from aggregate figures to source transactions, subject to confidentiality rules. They should also produce data that can be mapped to international standards, including government finance statistics.

The IMF's work with Vietnam on government finance statistics illustrates the importance of classification and reconciliation. The mission reviewed state budget balances, TABMIS data, and mappings to the Government Finance Statistics Manual 2014. Such work is not merely technical; it affects fiscal transparency, comparability, macroeconomic analysis, and international reporting. Digital systems can support international standards only when the chart of accounts, institutional coverage, economic classification, functional classification, and consolidation rules are carefully designed and consistently applied.

Fiscal transparency is another critical dimension. Vietnam has developed budget disclosure mechanisms, including public budget portals and legal requirements for disclosure. Digital transformation can make transparency more meaningful by shifting from static PDF publication to open, machine-readable, searchable, and user-friendly data. Citizens, researchers, journalists, businesses, and oversight institutions should be able to access budget estimates, execution data, procurement information, public investment project status, debt data, and audit findings in formats that support analysis. However, open fiscal data must be accurate, contextualized, and protected against misuse. The objective is not to publish more data indiscriminately, but to publish the right data with metadata, explanations, and safeguards.

5.8 Audit, internal control and accountability

Digital transformation changes the nature of public financial control. Traditional controls rely heavily on document checking, hierarchical approval, and ex post inspection. Digital PFM allows a shift toward preventive, automated, and risk-based controls. For example, systems can prevent payments without valid budget authority, verify supplier registration, check invoice duplication, match purchase orders with contracts and delivery records, and flag transactions that deviate from expected patterns. Internal audit can use data analytics to identify high-risk units or transactions. External audit can access digital audit trails and analyze entire populations of transactions rather than small samples.

This transformation requires a new control philosophy. Excessive manual pre-approval can slow service delivery and create discretion. Excessive automation can create blind spots if rules are poorly designed. The appropriate model is risk-based control: routine low-risk transactions should be processed efficiently, while high-risk transactions should receive deeper review. Digital systems can support this model by applying rules, scoring risks, preserving audit trails, and enabling post-audit analytics. But human judgment remains essential, especially for complex procurement, public investment, fiscal-risk assessment, and interpretation of unusual data patterns.

Accountability also depends on public and legislative oversight. Digital dashboards can support parliamentary budget scrutiny if they provide timely, credible, and comparable data. Citizen-facing portals can support social

accountability if information is understandable and linked to local services and projects. Complaint mechanisms can be integrated into procurement and public service platforms. Audit findings can be tracked digitally to monitor corrective actions. In this sense, digital PFM should be viewed as a governance infrastructure for accountability, not only as an administrative efficiency tool.

Table 2: Digital transformation priorities across Vietnam's PFM cycle

PFM stage	Digital opportunity	Main institutional risk	Priority reform action
Revenue administration	E-invoices, e-filing, data matching, risk scoring	Poor data quality or intrusive enforcement	Strengthen data standards, taxpayer services and risk-based audit
Budget preparation	Integrated ceilings, program data, performance information	Digital compilation without strategic prioritization	Link budget proposals to policy objectives and medium-term costs
Public investment	End-to-end project database and disbursement monitoring	Fragmented project identifiers and weak physical-progress data	Use stable project IDs from appraisal to asset handover
Treasury execution	Commitment controls, cash forecasting, electronic payments	Inconsistent classifications and delayed reconciliation	Modernize chart of accounts and real-time reporting
Procurement	Online bidding, open contracting data, red-flag analytics	Transparency limited to tendering, not contract delivery	Integrate procurement planning, contracts, payments and performance
Assets and debt	Digital registers, scenario analysis, fiscal-risk dashboards	Hidden liabilities and incomplete asset records	Integrate asset, debt and budget data
Audit and oversight	Digital audit trails, full-population analytics, corrective-action tracking	Algorithmic opacity and weak human oversight	Develop risk-based digital audit capacity

6. Opportunities, Risks and Constraints

6.1 Opportunities for Vietnam

Digital transformation creates at least six major opportunities for Vietnam's public finance system. The first is real-time fiscal visibility. In a fragmented paper-based or spreadsheet-based environment, decision-makers often receive information with delays. Digital systems can provide near-real-time data on revenue collection, budget execution, cash balances, procurement commitments, disbursement, debt service, and project progress. This improves the government's ability to adjust policy, manage shocks, and prevent arrears.

The second opportunity is stronger fiscal discipline through automated controls. Digital budget execution systems can prevent commitments and payments that violate budget authority. E-procurement systems can reduce off-system procurement. Electronic invoices can reduce tax evasion.

Digital cash management can reduce idle balances and payment delays. These controls do not eliminate the need for human judgment, but they can reduce routine errors and make violations more visible.

The third opportunity is better strategic allocation. When budget data are linked to programs, projects, outputs, outcomes, beneficiaries, and locations, policymakers can compare spending with policy results. This supports performance-informed budgeting and more evidence-based prioritization. Vietnam's development stage requires not only spending more but spending better. Digital data can help identify underperforming programs, delayed projects, overlapping subsidies, and regional disparities.

The fourth opportunity is improved procurement integrity and value for money. Digital procurement platforms can increase competition, transparency, and auditability. When combined with analytics, they can detect collusion risks, abnormal bidding patterns, and contract-performance problems. Procurement data are particularly valuable because procurement connects budget allocation with actual market transactions.

The fifth opportunity is enhanced transparency and citizen trust. Public finance is a domain where public trust depends on visible accountability. Digital budget portals, open procurement data, public investment dashboards, and citizen feedback tools can make fiscal information more accessible. Transparency can also improve policy debate by enabling researchers and civil society to analyze spending patterns.

The sixth opportunity is administrative efficiency and service quality. Taxpayers, suppliers, public employees, and citizens benefit when processes are digital, predictable, and user-friendly. Digital payments and online services reduce travel, paperwork, waiting time, and informal interactions. Efficiency gains are not only financial; they also reduce frustration and improve the perceived legitimacy of public institutions.

6.2 System fragmentation and interoperability constraints

The most important constraint is system fragmentation. Many governments have multiple digital systems that perform specific functions but do not exchange data effectively. In PFM, fragmentation can undermine the core objective of integrated fiscal management. For example, if procurement contracts are not linked to budget commitments, the treasury may not have a complete view of future payment obligations. If public investment project codes differ across planning, budget, procurement, and treasury systems, it becomes difficult to track project cost and progress. If asset registers do not connect to capital expenditure data, completed assets may be omitted or poorly maintained. If local budget data use inconsistent classifications, consolidation becomes difficult.

Interoperability is not only a technical issue. It requires common data definitions, governance arrangements, legal permissions, data-sharing protocols, and institutional incentives. Agencies may hesitate to share data because of confidentiality concerns, fear of scrutiny, or uncertainty about responsibility for errors. Vendors may create proprietary systems that are difficult to connect. Local governments may lack technical capacity to comply with standards. Addressing interoperability therefore requires a whole-of-government data architecture, not merely more software.

6.3 Data quality, classification and analytics

Digital PFM depends on data quality. Poor data quality can arise from inconsistent coding, incomplete fields, duplicate records, outdated master data, weak validation, manual workarounds, and lack of reconciliation. In public finance, a small classification error can have large consequences for reporting, control, and analysis. For instance, misclassifying capital and recurrent expenditure can distort investment analysis. Inaccurate supplier identifiers can weaken procurement oversight. Inconsistent project codes can prevent tracking of public investment. Poor taxpayer data can reduce risk-model accuracy.

Data quality must be built into the system, not corrected only at the reporting stage. This requires validation rules at data entry, controlled vocabularies, master-data governance, automated reconciliation, responsibilities for data stewardship, and feedback mechanisms for correcting errors. It also requires a modern chart of accounts that supports budget control, accounting, reporting, statistics, and policy analysis. Vietnam's ongoing work on government finance statistics and finance-sector data strategy provides a foundation for strengthening these functions.

Advanced analytics and artificial intelligence should be approached carefully. AI can support fraud detection, revenue forecasting, expenditure anomaly detection, procurement red-flagging, and policy simulation. However, AI models are only as good as the data, assumptions, and governance frameworks behind them. Public finance agencies should avoid opaque automated decision-making that affects taxpayers, suppliers, or beneficiaries without explanation or appeal. Responsible AI in PFM requires model documentation, human review, bias testing, security controls, and legal accountability.

6.4 Cybersecurity, privacy and operational resilience

Public finance systems are critical infrastructure. They contain sensitive data and process large financial flows. A cyber incident affecting tax systems, treasury payments, procurement platforms, or budget databases could disrupt public services, delay payments, expose confidential information, or undermine trust. As Vietnam increases integration and data sharing, the potential impact of cyber failures grows. Digital transformation must therefore be accompanied by cybersecurity-by-design, continuous monitoring, incident response planning, backup systems, access controls, encryption, authentication, and independent security audits.

Privacy and confidentiality are equally important. Tax data, supplier information, payroll records, social benefit data, and financial transactions cannot be treated as ordinary open data. Public finance agencies must classify data according to sensitivity and define who can access, process, share, anonymize, and disclose information. The principle should be maximum transparency for aggregate public finance information and strong protection for personal, confidential, and security-sensitive data. Data governance must balance openness and protection.

Operational resilience is also essential. Digital systems must remain functional during natural disasters, public health emergencies, network outages, cyberattacks, or administrative restructuring. Business-continuity planning should include backup payment channels, data recovery, crisis authorization procedures, and clear responsibilities across central and local levels. A digital PFM system that is

efficient but fragile can create systemic risk.

6.5 Human capacity, organizational change and digital inclusion

Human capacity is often the decisive factor in digital PFM reform. Public finance officials need new skills in data analysis, system use, cybersecurity awareness, process redesign, risk management, and digital service delivery. Accountants, budget officers, procurement officials, auditors, tax officers, and treasury staff must understand both fiscal rules and digital workflows. Managers must be able to interpret dashboards and ask the right questions. Technical teams must understand public finance, not only software development. Without these capabilities, digital systems may be underused or used mechanically.

Organizational change is equally important. Digital transformation can alter responsibilities, reduce manual discretion, expose performance differences, and create resistance. Officials may continue to use parallel spreadsheets if they do not trust system data. Agencies may resist integration if it reduces control over information. Local governments may perceive new reporting standards as burdensome. Reform strategies must therefore include communication, training, incentives, leadership commitment, and user support. Change management should be treated as a central reform component, not an afterthought.

Digital inclusion matters because public finance interacts with citizens and firms. Small businesses may need support to use e-invoices and digital tax services. Local suppliers may need assistance to participate in e-procurement. Citizens need accessible budget information, not only technical datasets. Digital transformation should reduce barriers, not create new ones. This requires mobile-friendly interfaces, plain-language guidance, help desks, multilingual or accessible formats where needed, and offline support for users with limited connectivity or digital literacy.

7. Policy Recommendations and Reform Roadmap

7.1 Build a unified digital PFM architecture

Vietnam should develop a unified digital PFM architecture that defines how budget, treasury, revenue, procurement, public investment, asset, debt, accounting, audit, and disclosure systems connect. The architecture should not necessarily require a single monolithic platform. Modern digital government often works through interoperable systems connected by standards, APIs, shared identifiers, and common governance rules. What matters is that core fiscal data can be exchanged, reconciled, and traced across the PFM cycle.

The architecture should identify core data objects: budget organizations, programs, projects, procurement packages, contracts, suppliers, taxpayers, beneficiaries, assets, loans, guarantees, locations, and accounting classifications. Each object should have a stable identifier and a responsible data owner. For public investment, a project identifier should be created at proposal stage and used through appraisal, budget allocation, procurement, disbursement, asset handover, and evaluation. For suppliers, identifiers should link procurement registration, tax status, contract awards, payments, and sanctions. For budget organizations, identifiers should support consolidation across levels of government. This master-data approach would reduce duplication and improve traceability.

A unified architecture should also define the relationship between central and local systems. Vietnam's fiscal system involves significant subnational responsibilities, and digital reform must work across provinces, districts, communes, and public service units. Central standards are needed for comparability, but local implementation requires capacity and flexibility. The government should provide shared platforms, templates, training, and technical support to ensure that subnational digital PFM does not become a patchwork of incompatible solutions.

7.2 Strengthen data governance and fiscal data standards

Data governance should become a formal pillar of public finance reform. The Ministry of Finance's data strategy provides an opportunity to establish rules for data ownership, classification, quality, sharing, retention, security, and disclosure. Fiscal data standards should cover the chart of accounts, budget classification, program and project classification, supplier and taxpayer identifiers, geographic codes, economic classifications, functional classifications, procurement categories, asset categories, and metadata. These standards should be legally recognized and operationally embedded in systems.

The chart of accounts deserves special attention. A modern chart of accounts should support budget control, accounting, fiscal statistics, reporting, management analysis, and transparency. It should enable the government to produce reports by administrative unit, economic category, function, program, project, fund, financing source, location, and other policy tags. It should also support mapping to government finance statistics and financial statements. Reforming the chart of accounts is technically difficult because it affects many systems and users, but it is essential for integrated digital PFM.

Data-quality management should be institutionalized. Each major fiscal dataset should have a data steward responsible for quality rules, correction procedures, and user support. Automated validation should prevent incomplete or inconsistent entries. Reconciliation should be routine and documented. Data-quality indicators should be reported to managers. Over time, Vietnam could establish a fiscal data quality dashboard showing completeness, timeliness, reconciliation status, and error rates by agency or locality. Such a dashboard would make data quality a managerial issue rather than a hidden technical problem.

7.3 Link budget, public investment, procurement and treasury execution

A priority reform should be the integration of budget preparation, public investment, procurement, and treasury execution. These functions are frequently managed through different processes, yet they form a single expenditure chain. Approved budgets should generate procurement plans where relevant. Procurement commitments should update cash forecasts. Contract amendments should be reflected in commitment controls. Payments should reference contracts and project milestones. Completed capital projects should update asset registers. Audit trails should allow oversight institutions to follow the chain from policy decision to payment and output.

This integration would improve fiscal discipline by preventing unfunded commitments and detecting arrears risks. It would improve allocative efficiency by showing

whether priority projects receive and use funds as planned. It would improve operational efficiency by identifying where delays occur: budget approval, procurement, contract signing, land clearance, verification, or payment. It would improve transparency by allowing public dashboards to show project allocations, contract awards, disbursement, and progress.

The integration should begin with high-value and high-risk expenditure areas, especially public investment, infrastructure projects, and major procurement packages. Pilot projects could be implemented in selected ministries and provinces before scaling nationally. The pilots should test stable project identifiers, procurement-budget links, contract-payment links, and public disclosure formats. Lessons should be codified into national standards.

7.4 Move toward performance-informed and citizen-oriented budgeting

Digital transformation should support a gradual move toward performance-informed budgeting. This does not mean replacing political and administrative judgment with mechanical indicators. Rather, it means that budget decisions should be informed by credible data on objectives, outputs, outcomes, unit costs, beneficiaries, and past performance. Digital systems can make such data available at the right time. They can also help identify programs with weak execution, high cost variation, or unclear results.

Vietnam should develop a practical performance-data model. Ministries and localities should not be overloaded with excessive indicators. Instead, each major program should have a limited set of output and outcome indicators linked to policy objectives. Public investment projects should report physical progress and expected service benefits. Social programs should report beneficiary coverage and delivery timeliness. Digital systems should connect financial data with non-financial performance data. The objective is to improve budget dialogue, not to create a compliance exercise.

Citizen-oriented budgeting is the transparency counterpart of performance-informed budgeting. Public budget information should be presented in formats that citizens can understand. This includes citizen budgets, interactive charts, local project maps, downloadable data, and explanations of major policy changes. Public disclosure should be timely and predictable. Vietnam's budget disclosure framework can be strengthened by moving toward open fiscal data standards, machine-readable datasets, and project-level disclosure for major investments.

7.5 Modernize internal control, audit and anti-corruption analytics

Digital PFM should be accompanied by modern internal control. Rules should be embedded in systems, but controls should be risk-based. Low-risk routine transactions can be automated, while high-risk transactions should be flagged for review. Procurement red flags, tax compliance risk scores, duplicate payment detection, unusual spending spikes, split procurement packages, and delayed project disbursement can all be monitored through analytics. However, risk models must be validated and subject to human oversight.

Internal audit functions should develop data analytics capacity. Instead of relying only on manual document review, auditors should analyze transaction populations,

identify anomalies, and evaluate system controls. External audit institutions should have secure access to relevant digital records and audit trails. Audit recommendations should be tracked digitally, with responsible agencies and deadlines. This would improve follow-up and accountability.

Anti-corruption analytics should be used carefully. Digital systems can identify risk patterns, but they do not prove wrongdoing by themselves. Red flags should trigger review, not automatic punishment. Legal procedures, rights of explanation, and evidentiary standards must be respected. The goal is to make oversight smarter and more preventive while preserving due process.

7.6 Develop cybersecurity, privacy and responsible AI safeguards

Vietnam should treat cybersecurity as an integral part of public finance reform. Every major public finance platform should undergo security assessment, penetration testing, access-control review, and continuity planning. Critical systems should have backup and disaster recovery arrangements. Staff should receive cybersecurity awareness training. Incident response responsibilities should be clear. Procurement of digital systems should include security requirements, source-code or escrow arrangements where appropriate, maintenance obligations, and vendor accountability.

Privacy and data protection rules should be operationalized in public finance systems. Data should be classified according to sensitivity. Access should be role-based and logged. Personal and confidential data should not be disclosed through open-data portals. Data-sharing agreements should specify purpose, legal basis, retention, security, and accountability. As public finance systems become more integrated, privacy-by-design becomes more important.

Responsible AI should be introduced through a staged approach. In the first stage, AI can assist with internal analytics, such as anomaly detection, forecasting support, document classification, and help-desk services. In the second stage, AI can support risk scoring and policy simulation under strong human oversight. In the third stage, more advanced predictive governance may be considered only after data quality, legal safeguards, and institutional capacity are mature. AI should not be used for decisions affecting taxpayers, suppliers, or beneficiaries without explainability, appeal mechanisms, and human accountability.

7.7 Invest in people and change management

The success of digital PFM reform depends on people. Vietnam should develop a competency framework for digital public finance. Budget officers need skills in medium-term planning, digital budget systems, and data interpretation. Treasury staff need skills in electronic controls, cash forecasting, and reporting. Procurement officials need skills in e-procurement, data disclosure, and contract analytics. Tax officials need skills in digital compliance and taxpayer services. Auditors need skills in data analytics and information-system audit. Managers need skills in using dashboards for decisions rather than treating them as reporting rituals.

Training should be continuous and role-specific. It should combine fiscal rules, system operation, data quality, ethics,

cybersecurity, and problem-solving. Peer learning among provinces and ministries should be encouraged. Help desks and user communities should be strengthened. Digital transformation should be included in performance management for public finance agencies, but indicators should measure meaningful use and outcomes, not only system adoption rates.

Change management should address incentives. If officials are evaluated mainly on paper compliance, they will use digital systems to reproduce paper logic. If agencies are rewarded for data sharing, timely reporting, and problem resolution, digital reform will have stronger traction. Leadership commitment is essential. Senior officials must use system data in meetings, budget discussions, and oversight processes. When leaders rely on digital evidence, organizations have incentives to improve data quality.

Table 3: Suggested roadmap for digital public financial management reform to 2030

Period	Main objective	Key actions	Expected result
2026-2027	Consolidate foundations	Adopt digital PFM architecture; define master data; improve chart-of-accounts mapping; pilot budget-procurement-treasury links	Better data consistency and early integration pilots
2028-2030	Scale integrated data-driven PFM	Expand project identifiers; integrate procurement contracts and payments; publish machine-readable fiscal data; strengthen cybersecurity and audit analytics	More transparent, risk-based and performance-informed fiscal management
After 2030	Move toward predictive and participatory fiscal governance	Use validated AI for forecasting and risk detection; improve citizen-facing project dashboards; link spending to outcomes	Proactive, accountable and citizen-oriented digital public finance

8. Discussion

The analysis suggests that Vietnam is entering a second generation of digital public finance reform. The first generation focused on establishing major digital platforms: treasury and budget systems, tax systems, e-invoices, customs systems, e-procurement, public service portals, and disclosure portals. These platforms are necessary achievements. The second generation must focus on integration, data quality, performance, risk management, and public value. The reform question is no longer whether public finance should be digital, but how digital public finance should be governed.

A central lesson is that digital transformation should be anchored in PFM outcomes. If the objective is fiscal discipline, systems must control commitments, cash, arrears, debt, and fiscal risks. If the objective is strategic allocation, systems must link resources to policies, programs, projects, and results. If the objective is efficient service delivery, systems must reduce transaction costs and improve predictability for spending units, suppliers, taxpayers, and citizens. If the objective is transparency, systems must disclose meaningful and usable data. Technology choices should follow these outcomes, not precede them.

Another lesson is that Vietnam should avoid fragmented

digital modernization. Isolated platforms can produce short-term efficiency but long-term complexity. The public finance sector needs a shared architecture that defines data objects, identifiers, interfaces, and responsibilities. The most valuable reforms are often found at interfaces: tax data with business registration, budget data with procurement plans, procurement contracts with treasury commitments, project records with asset registers, and fiscal reports with public disclosure portals. Interface reform is less visible than launching a new platform, but it is more transformative.

The analysis also underscores the importance of trust. Digital public finance can increase trust if it makes public money more transparent, services more convenient, controls more reliable, and decisions more evidence-based. It can reduce trust if citizens experience errors, exclusion, cyber incidents, opaque algorithms, or intrusive data use. Trust therefore requires safeguards: cybersecurity, privacy, due process, accountability, explainability, and accessible communication. Digital PFM is ultimately a governance reform, and governance is judged not only by efficiency but also by fairness and legitimacy.

For Vietnam, the political economy of digital PFM will be shaped by central-local relations, agency mandates, data ownership, administrative capacity, and reform incentives. Central standards are necessary for consolidation and transparency, but local governments need practical support. Agencies need incentives to share data and improve quality. Public officials need training and leadership. Citizens and firms need usable services. Vendors need clear standards and accountability. External oversight institutions need access to data and skills. Reform success will depend on aligning these actors around a common public value proposition.

9. Conclusion

Digital transformation is reshaping public financial management in Vietnam. The country's national digital transformation agenda, improving digital-government performance, evolving budget legislation, electronic tax modernization, e-procurement system, and Ministry of Finance data initiatives provide important foundations for a more integrated and transparent fiscal state. The central challenge is to ensure that these foundations become a coherent digital PFM ecosystem rather than a collection of separate platforms.

The article has argued that digital public finance should be understood as a socio-technical and institutional reform. Technology can support real-time fiscal monitoring, automated controls, better tax compliance, procurement transparency, cash management, fiscal reporting, audit analytics, and open budget data. But these benefits depend on legal validity, process redesign, data governance, interoperability, cybersecurity, human capacity, and accountability. Digital transformation that ignores institutional conditions may accelerate fragmented procedures and create new risks. Digital transformation that is embedded in a coherent reform architecture can improve fiscal discipline, strategic allocation, service delivery, transparency, and citizen trust.

Vietnam should prioritize six reform directions. First, build a unified digital PFM architecture based on common identifiers and interoperable systems. Second, strengthen fiscal data governance, including chart-of-accounts modernization, master data, metadata, data-quality rules,

and data stewardship. Third, integrate budget preparation, public investment, procurement, treasury execution, asset management, and reporting. Fourth, move gradually toward performance-informed and citizen-oriented budgeting supported by meaningful digital data. Fifth, modernize internal control, audit, and anti-corruption analytics while preserving due process. Sixth, invest in cybersecurity, privacy, responsible AI, human capacity, and change management.

The broader implication is that the next phase of Vietnam's public finance reform should be data-centered but not technology-centered. Data are valuable when they support better decisions, better controls, better services, and better accountability. Artificial intelligence and big data may become important, but only after basic data quality, interoperability, and governance are robust. The reform vision should be a public finance system in which money can be traced from policy commitment to budget allocation, procurement, payment, asset creation, service delivery, and public disclosure. Achieving this vision would strengthen Vietnam's capacity to finance sustainable development, respond to shocks, and maintain public trust in the management of state resources.

Future research should examine the empirical effects of digital PFM reforms in Vietnam. Possible topics include the impact of e-invoices on tax compliance, the effect of e-procurement on competition and prices, the relationship between digital budget disclosure and citizen participation, the role of digital treasury systems in reducing payment delays, and subnational variation in digital PFM capacity. Such research would complement the policy analysis presented here and provide more precise evidence for the next generation of reforms.

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