

The GLOCEPS

Special Focus

Harnessing block chain technologies to enhance wage bill management by 2027 in Kenya

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Executive Summary

The absence of real-time integrated information sharing, reporting, and controls of public service payroll data among the relevant institutions impedes efforts on wage crisis management in Kenya. Systemic challenges that face public service payroll management include ghost workers, falsification of documents, lack of multiple controls, and database manipulation. However, harnessing the capabilities of block-chain technology has the potential to prevent fraud and increase the effectiveness of payroll systems in public service by improving data security and

integrity. Key opportunities to explore include automating and integrating payroll reporting and control systems to monitor in real-time the eligibility of payroll transactions; management of payroll across block-chain technology networks; and embracing smart contracts in public service. This will help detect transaction data inconsistencies, create a single and integrated real-time record for wage bill-related data, and protect data integrity in budgeting, approval of payments, and the final disbursement of public wages.

Recommendations

The Ministry of Public Service, Performance, and Delivery should;

- a) develop appropriate policies to support the adoption of blockchain technology in human resource operations;
- b) lobby the national assembly to legislate appropriate laws to support the operationalization of the adoption of blockchain technology in public service in Kenya and;
- c) enhance the capacity of various public service organizations to effectively use blockchain technology in human resource management.



Harnessing block chain technologies to enhance wage bill management by 2027 in Kenya

Full Brief

Context

The concluded Third National Wage Bill Conference 2024 has revitalized debates on tackling the ballooning wage bill in Kenya. While there has been significant progress in the management of public wage bills in Kenya, it falls short of achieving the 30% threshold of the total collected revenues as provided for in Public Finance Management (PFM) Act, 2012. Currently, the government has only been able to reduce the wage bill from 51% to 46% of the revenue share. The conference retaliated that efforts to reduce the wage bill to 35% against revenue by the year 2028 yet previous efforts have not yielded the intended efforts. A nine-point resolution adopted during the conference by the Salaries and Remuneration Commission (SRC) points to uncomfortable labor conversations in the public sector in the coming days. The resolutions will affect human resource operations at both national and county governments. While the issue of tackling fake certificates has been lauded as a key strategy to contain the wage bill, it has not been successful before due to unprecedented legal hurdles. In February 2024, the Public Service Commission handed over a report on forged academic certificates to the Ethics and Anti-Corruption Commission (EACC) and the Directorate of Criminal Investigations, to take legal action against the culprits. However, previous experiences with this approach have been saddled by legal hurdles, casting doubts on its appropriateness. This necessitates initiatives that are in tandem with good practices globally in enhancing wage bill management at both tiers of government. The integration of blockchain technology offers opportunities that could revolutionize the management and processing of public service payroll systems in the quest

to achieve the 35% target by 2027. These include;

Automatic and integrated reporting and control systems

The 2024 Draft payroll management policy for the public service is silent on the critical role of key oversight institutions in the real-time management of ballooning wage bills. Entities such as the National Treasury, the Office of the Auditor General, the Office of the Controller of Budgets, and the Office of the Prime Cabinet Secretary where the state Department of Public Service is domiciled have not been technologically enjoined in efforts to contain the wage bill. This contradicts good practices that enhance transparency in payroll management by embracing weak checks and balances. This is a key impediment to containing its surge.

As such the Government Human Resource Information System (GHRIS) being implemented by the Ministry of Public Service, Performance, and Delivery does not resolve the fragmentation and opaque management of the wage bill at the organizational level. This encourages risks associated with concentrating the management of the payroll data at a single point in various public service institutions or a specific county public service board including high incidences of distortion of employee records. Similarly, the electronic system employed by the government has not been able to overcome systemic challenges including data manipulation, ghost workers, cybercrimes, and lack of decentralization of information. The allied threat perpetuates financial fraud that balloons the existing wage bill. The situation persists due to the absence of automatic and integrated reporting systems that have real-time vertical and horizontal controls



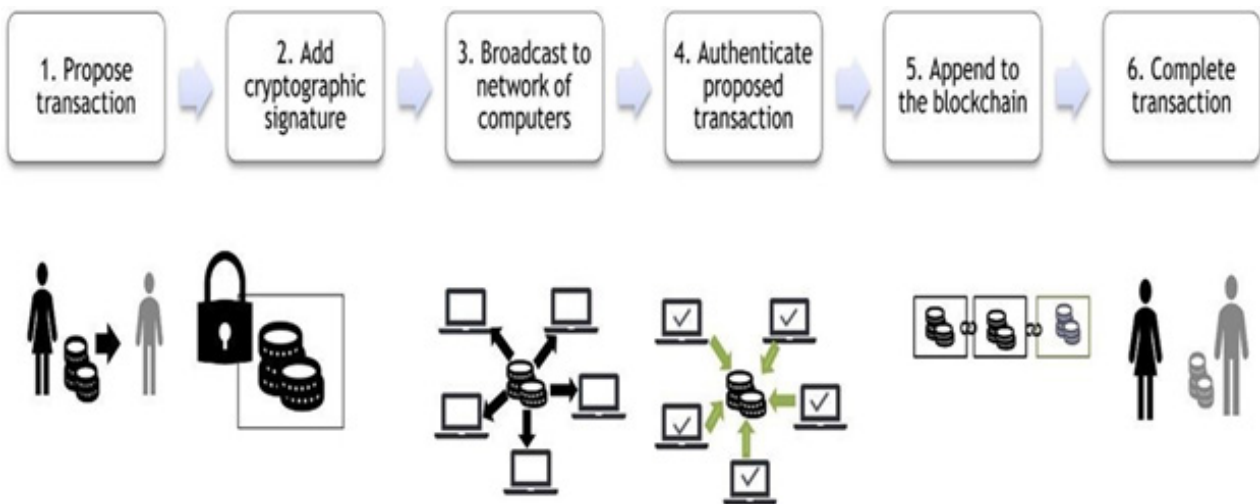


that are highly resistant to unauthorized access and tampering. Experiences from other jurisdictions including New Zealand, Nigeria, Ghana, Democratic Republic of Congo, and Tanzania shows that Human Capital Management Information System (HCMIS) has not been a panacea to ensuring data integrity and accountability.

Block chain technology is utilized in payroll systems to enhance security, transparency, and efficiency. The technology relies on

cryptographic techniques to secure data. The information stored in the block chain encrypted and distributed across the associated institutions in real time, making it highly resistant to unauthorized access and tampering as shown in Figure 1. Each transaction is recorded in a block, which is linked together in a chain. This creates a transparent and immutable ledger, meaning that once information is added, it cannot be altered. This transparency reduces the risk of fraud or errors in payroll records.

Figure 1. Blockchain-integrated reporting and control payroll systems



Decentralization of public service payroll

Payroll management in the Public Service is guided by provisions of relevant legislation and circulars issued to the service by the Ministry of Public Service, Performance, and Delivery. While the GHRIS system aims to automate government human resource operations, it does not resolve silos management of payrolls at the institutional level. While the ministry shall be responsible for overseeing the administration of payroll management in public service organizations, specific entities shall maintain one automated payroll for all employees managed by the

head of human resources. Data verification, authentication, and approval are domiciled at the organizational level impeding strict and impartial oversight of data fraud and manipulation.

Unlike traditional payroll systems, which are centralized and controlled by a single entity, blockchain is comprised of distributed ledgers that record transactions across many computers, or nodes. The decentralized payroll systems distribute the control and management of payroll across a network ensuring that no single individual can delete or modify a transaction in the network because transactions require consensus





from the parties concerned. This creates an immutable and transparent database which is resistant to manipulation by one party. As such, issues relating to data manipulation and to some extent cybercrimes can be drastically reduced or eliminated.

Thus decentralized nature of blockchain ensures that no single entity has full control over the employees' data enhancing transparency and accountability. It gives peers in the network privilege of approving transactions resolving issue of ghost workers since the peers approve recruitments unlike in a centralized system where few selected individuals are in charge. Besides, it fundamentally changes the traditional audit process that involves waiting for records from concerned parties as complete records are already stored on the blockchain allowing for continuous audit for any "on-chain" transactions.

Smart contracts

Despite the government embracing electronic payroll systems, payroll transactions are not well secured and remain prone to manipulation, perpetuating the threat of ghost workers. Embracing blockchain technology can eliminate this challenge by employing smart contracts. Smart agreements are aimed at transforming paper contracts into digital contracts which are self-executing with the terms of the agreement directly written into code, hence difficult to alter

information. In payroll systems, they help to automate payment processes, ensuring that employees are paid accurately and on time-based on predefined criteria. This creates a more secure, transparent, and streamlined process for managing employee compensation. Similarly, they strengthen automated compliance that helps to track workers' attendance creating an accurate and tamper-resistant record of employee working hours, reducing disputes and errors in workforce calculations.

Conclusion

Containing the ballooning wage bill would require a multi-faceted approach in the race to reduce the wage bill by 35% by 2027. The issue of tackling fake certificates has been a bone of contention due to legal hurdles, making the initiative ineffective. Going forward, embracing the potential of blockchain technology offers long-range prospects for sustainable solutions for addressing the wage bill crisis. The integration of blockchain technology in public service payroll systems management offers opportunities that could revolutionize the efficiency of public wage bill crisis. This will help to monitor in real-time the eligibility of payroll transactions, detect transaction data inconsistencies, create a single and integrated real-time record for wage bill-related data, and protect data integrity in budgeting, approval of payments, and the final disbursement of public wages.

