



THE STATE OF INCLUSIVE INSTANT PAYMENT SYSTEMS IN AFRICA

SIIPS 2023 • **CASE STUDY**

MALAWI: NATSWITCH



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Origin story



Challenge

In 2014, 75% of all transactions in the Malawian economy took place using cash and roughly half of the adult population were financially excluded (UNCTAD 2014). Malawi residents had limited access to financial services, exacerbated by a lack of coordination between public and private initiatives seeking to promote financial

inclusion. The use of electronic payments infrastructure in Malawi was low, and the retail and business sectors lacked a convenient means of making and receiving payments (Reserve Bank of Malawi 2008). The absence of interoperability between payment service providers (PSPs), high infrastructure costs, and low fee revenue on transactions were the primary barriers to reaching additional scale with electronic payments.



Value addition

The overarching desire for interoperability motivated banks to consult with the Reserve Bank of Malawi (RBM) to modernize the financial sector and the country's national payment systems. The primary objective of their co-creation, the Natswitch real-time payment system, is a common payment system infrastructure for all PSPs, with sufficient scale to enable low-cost services for end-users (IFC 2021). The instant feature of the system aims to improve the customer experience and increase the circulation of money. Overall, Natswitch is expected to catalyze economic growth in Malawi (RBM 2022a).



Timeline

The private sector and its desire for interoperability catalyzed the launch of Natswitch. In 2010/11, banks convened and raised the need for interoperability to replace the widespread bilateral arrangements. At that time, the RBM was developing financial inclusion and digital retail payments strategies. A digital platform to facilitate interoperability between banks and non-bank players fit into that effort, and RBM launched the interoperability project that would lead to Natswitch with funding and support from the World Bank.

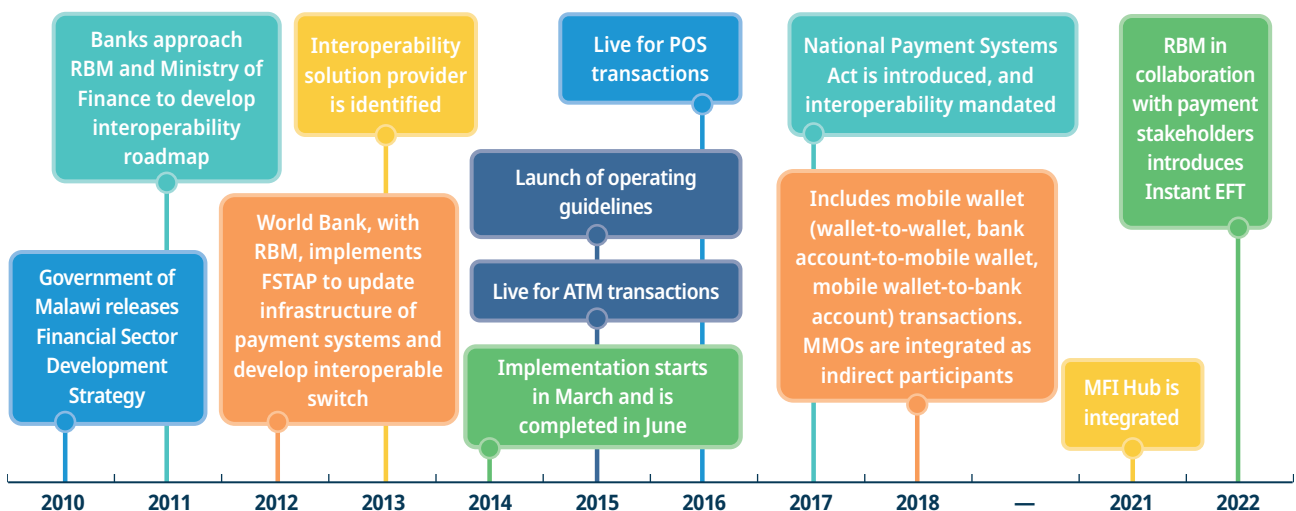
The RBM formed a steering committee at the outset of the project that included the Ministry of Finance, RBM, and the banks. The steering committee was responsible for providing recommendations on project scope, procurement, and the business case for the digital

platform. In 2014, with funding from the World Bank's Financial Sector Technical Assistance Project (FSTAP), the National Switch Ltd (Natswitch Ltd) company and the Natswitch system were launched. Natswitch initially launched with ATM interoperability (2015) followed by POS the next year. Membership was initially restricted to banks.

The banking community in Malawi was initially resistant to integrating with non-banks. That concern was allayed once Natswitch Ltd and the World Bank demonstrated that the switch's sustainability relied upon a level of scale that could only be achieved if it captured the traffic and additional customers served by non-bank PSPs. Ultimately, the banking sector agreed.

In addition, in 2017 the RBM promulgated the National Payment System Act and interoperability directives for all PSPs, mandating that all connect to the switch, thereby ensuring scale and sustainability across the financial sector. These events resulted in 2018 in the integration of non-bank PSPs, including e-money providers, as indirect participants of the system. The microfinance hub (MFI Hub) integrated with Natswitch in 2021. In 2022, Natswitch started processing EFT transfers in real-time. Natswitch Ltd is working with the Malawian finance ministry to implement an e-gateway under the 'Financial Inclusion and Entrepreneurship Scaling' project. By the end of 2023, Natswitch Ltd hopes to start testing the gateway and integrating government ministries, departments, and agencies. Natswitch Ltd plans to integrate the system with SADC's TCIB by December 2024.

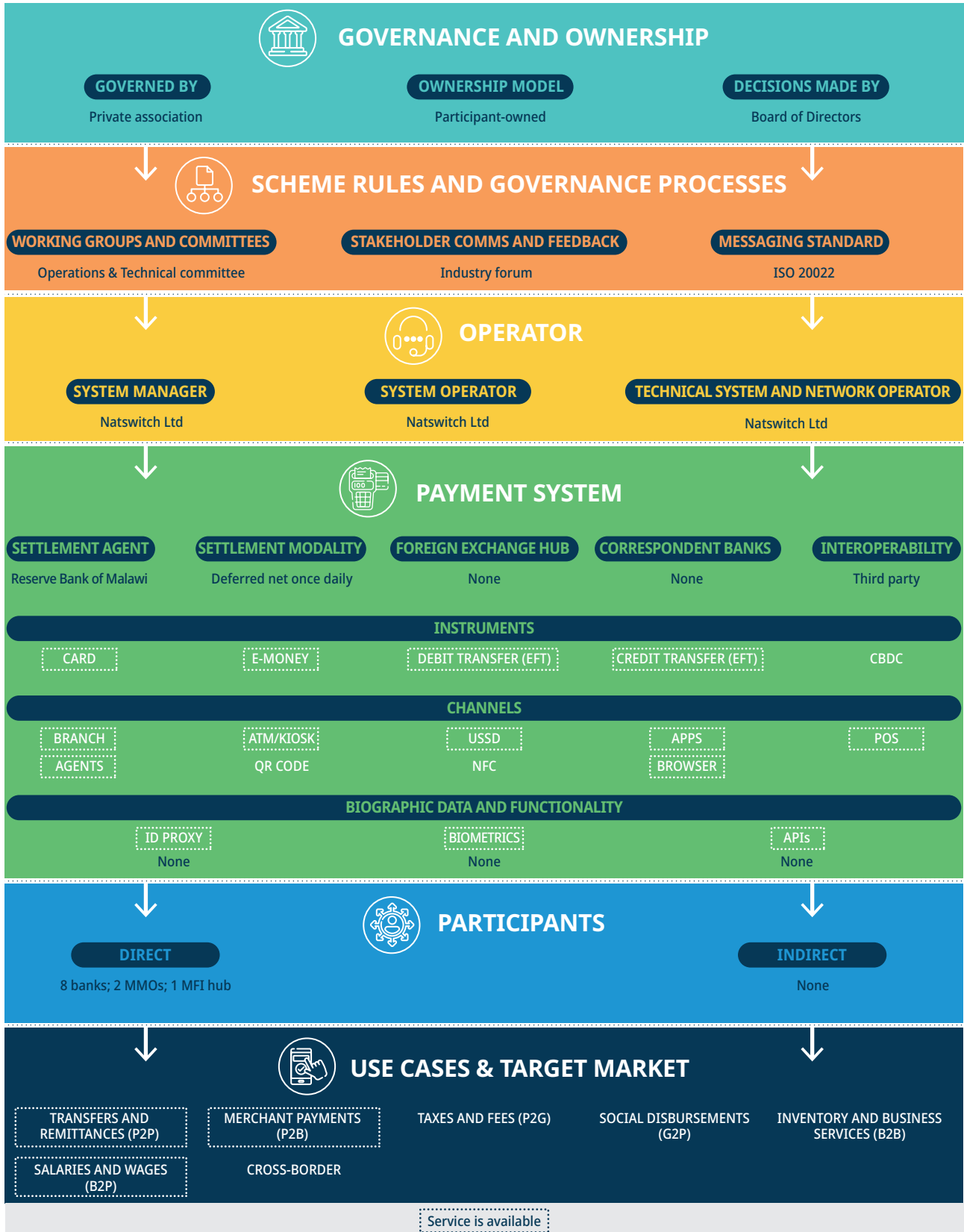
FIGURE H.8 | Natswitch timeline



Governance and operations

>> Payment system overview

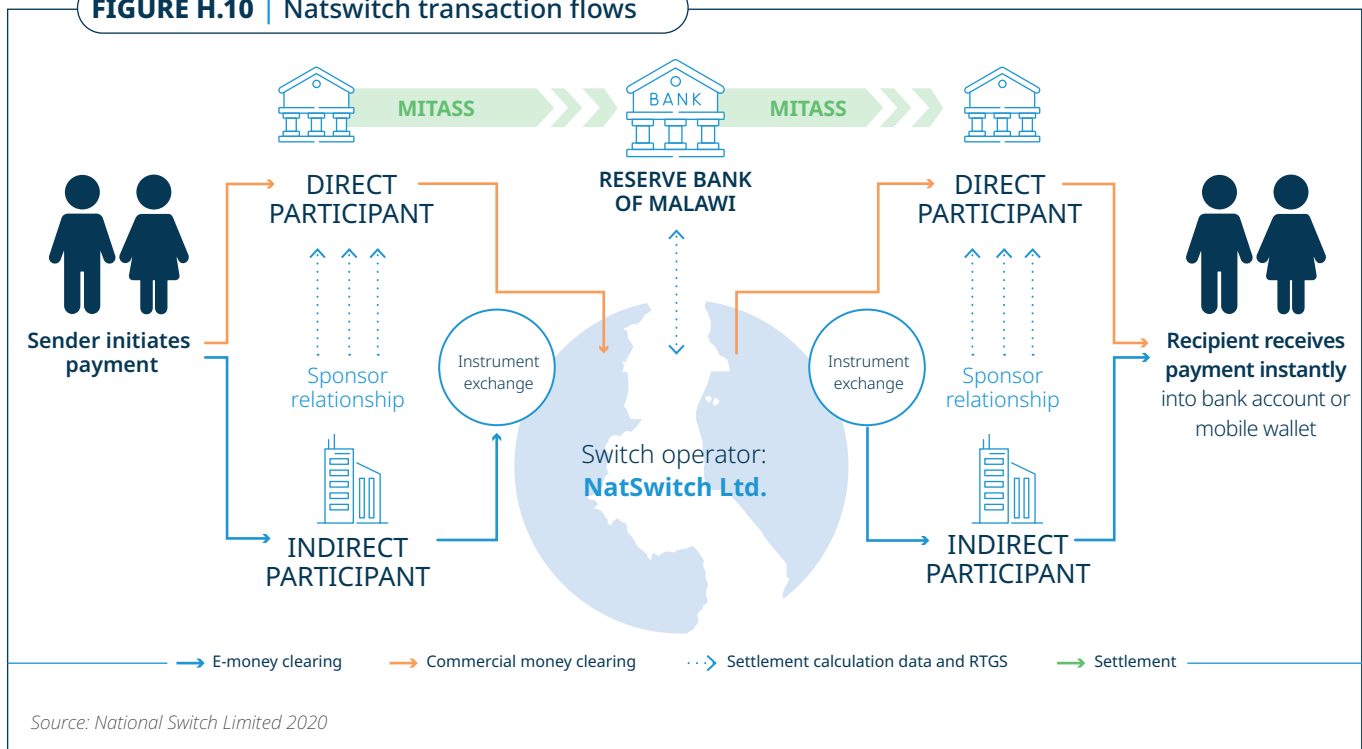
FIGURE H.9 | Natswitch model overview



Natswitch is a shared switch facility used to connect all banks and other financial institutions, including MMOs and MFIs. It operates 24/7/365 with a targeted 99.9% uptime, in line with international card association standards (Natswitch Limited 2020). At the point of authorization, the payer (payee) is debited (credited) in real-time. Settlement of inter-bank transactions takes place between 8:00 and 9:00am of each day on a deferred net basis via the Malawi Interbank Transfers and Settlement System (MITASS) at the RBM. All

banks connect to MITASS directly. Non-bank financial institutions require sponsorship by a bank to settle transactions on their behalf (Natswitch Limited 2020). The system includes eight banks, two MMOs, and the MFI Hub, which houses 20 SACCOs and 19 MFIs (MFI Hub 2023). Natswitch Ltd outsources all technical support: BPC Banking Technologies Group supports the national switch application, Mitra Systems supports computer hardware, and Globe Internet supports networking and telecommunications.

FIGURE H.10 | Natswitch transaction flows



Governance structure

Natswitch, the switch, is owned by Natswitch Ltd, the company, with established consultations with the participants and RBM. Natswitch Ltd is a privately-owned, not-for-profit limited liability company. It sets the scheme rules and technical standards, a process in which all shareholders participate. Natswitch is run by Natswitch Ltd under a defined service-level agreement (SLA) with its members. Owners include all eight commercial banks and two MMOs. Each shareholder has equal voting rights. The Natswitch board is the governing body, with ultimate authority over the system’s operations, subject to the oversight of the RBM. The CEOs of all Natswitch

member banks hold board seats. Participants are either members or non-members, according to their ownership role and contribution to the facility’s set-up costs. Natswitch’s board operates with multiple committees, including a technical committee that creates task forces to deal with technical issues, and a policy committee that considers governance issues related to the national switch ecosystem. RBM has no direct decision-making power in Natswitch beyond oversight and regulation. Natswitch permits fintechs to join, however they first require a letter of no objection from other existing participants. The MFI Hub is integrated with Natswitch as one participant representing the affiliated SACCOs and MFIs.



Functionality

Natswitch offers instant clearing of low-value transactions through ATMs, POS systems, branches, internet-based payments (browser and apps), and USSD (Reserve Bank of Malawi 2022a). There are plans to include a QR code standard and proxy ID guidelines under an e-payments gateway project in development. In the future, mobile numbers and other PSP-maintained proxy IDs will be supported and routed using debit card payment standards combined with institutional BIN routing. Most transactions are single message. The exception are POS transactions, which are dual message and PIN/password authorized. Natswitch similarly provides a range of instruments, including e-money, card, credit EFT, and debit EFT (Natswitch Limited 2020).



Technical standards and use cases

Natswitch supports a set of use cases, including merchant payments (P2B), P2P, and B2B. There are plans to develop a national e-payments gateway that will facilitate social disbursements and government payments (G2P), as well as P2G, G2B, B2G, and G2G payments. Natswitch also plans to develop an e-commerce service that will facilitate B2B, B2P, and P2B payments. The gateway will be

structured such that the agency initiating a payment has a contractual relationship with the RBM or commercial bank through which the funds will be disbursed.

The switch currently runs on the ISO 8583 messaging standard. Discussions are underway regarding the creation of a translation layer to enable the conversion from ISO 8583 to ISO 20022 (and vice versa). Natswitch is also working on an agent banking functionality project to allow participant end-users to process interoperable cash-in/cash-out transactions through the switch.



Business model

Natswitch is set up as a public utility and operates on a cost-recovery basis. The World Bank, through the FSTAP, funded the start-up costs for the National Switch with a five-year loan facility of \$28 million (MK28.7 billion). \$2.2 million (MK2.7 billion) was disbursed to acquire and install the national switch.

The Bankers Association of Malawi supplemented the costs of implementing Natswitch through equity investments (Malakata 2023). To cover operating costs and maintain a not-for-loss business model, all participants of Natswitch are required to pay a joining



fee; only non-member participants pay an annual membership fee (Chiphwanya and Orama 2016). In addition, Natswitch assesses an interchange fee for all transactions. All fees, other than for POS transactions, can be passed onto the originator. The exact amounts are not publicly available. Under the Retail Payment System Interoperability Directive, PSPs cannot charge end-users to initiate POS transactions (Reserve Bank of Malawi 2017). The interchange fee is therefore covered by acceptance fees charged to the merchant. PSPs are required to consult the RBM before raising ATM and instant EFT charges. There is an explicit mandate against fee collusion among PSPs.



Scheme rules

Natswitch Ltd launched the operating guidelines for the National Switch in 2015, with revisions in 2020, to govern the operations of the Natswitch ecosystem and relationships among its members. The guidelines include member obligations, fees, and roles and responsibilities within the switch. To be considered a participant of Natswitch, a PSP applicant must be licensed by RBM as a bank or financial institution, and possess technical infrastructure and the requisite up-to-date security and integration software. The Natswitch board is responsible for formal

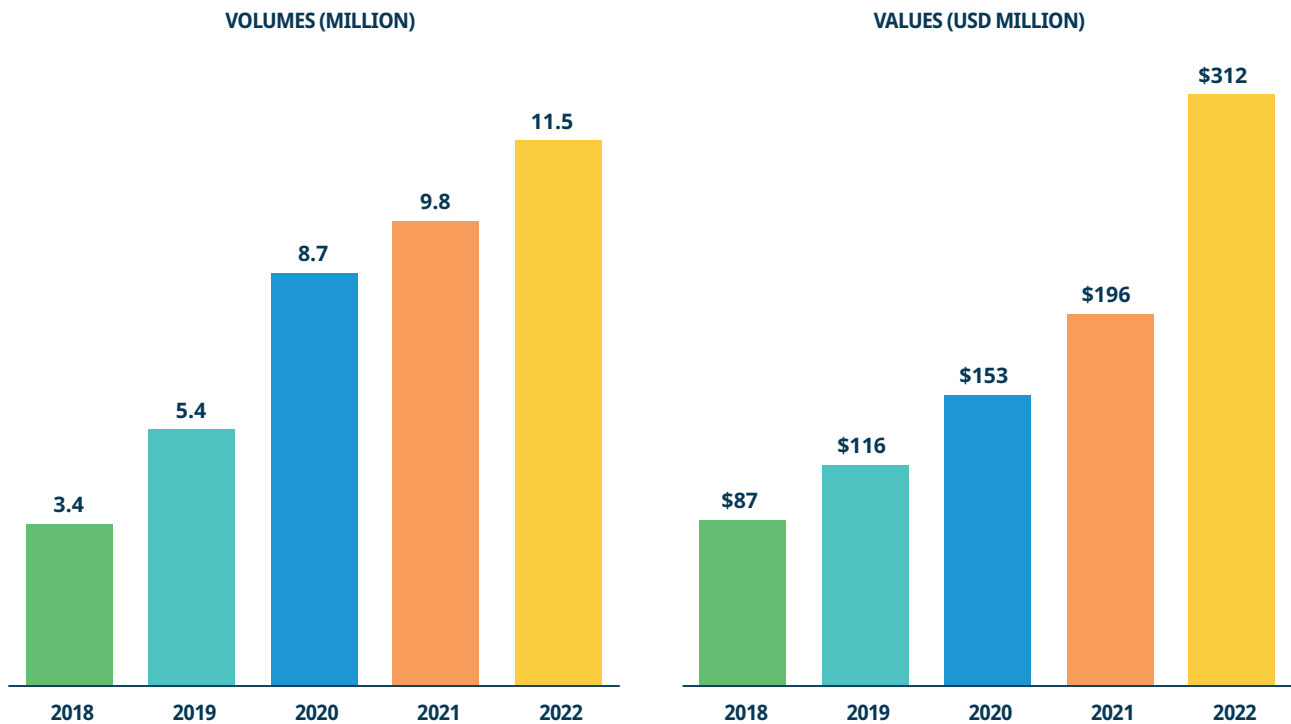
approval of new participants. Non-compliance with the requirements outlined in the guidelines results in penalties or fines. The scheme rules also set out security requirements based on PCI-DSS and EMV standards and SWIFT international security guidelines.

The scheme rules include mechanisms for dispute management between PSPs. Disputes are filed via an online portal available to PSPs. As per the payment systems law, if a dispute is not resolved via the dispute management portal within 72 business hours, the offending PSP receives a penalty (Natswitch Limited 2020). Natswitch follows conciliation, mediation and arbitration processes when resolving disputes between PSPs, in line with payment systems law.



Volumes and values processed by the payments system

End-user transaction volumes between 2018 and 2022 had a 51% CAGR, while values saw a 53% compound annual growth rate (CAGR) (Figure 64). Average annual transaction values were \$17 in 2020 and \$27 in 2022, indicating increased adoption of higher-value transaction use cases. Overall, only around 20% of transaction values that go through Natswitch are off-us transactions.

FIGURE H.11 | Natswitch transaction volumes and values

Source: Reserve Bank of Malawi 2023



Regulation

Prior to the launch of Natswitch, in 2001, the National Payments Council together with RBM and the Bankers Association of Malawi endorsed the Malawi National Payments Systems Vision and Strategy framework. The strategy framework was subsequently updated in 2008 and governed the future of payment systems development until 2013.

The RBM also implemented several laws and regulations targeted at Malawi's payment ecosystem and its

respective actors. This includes the Malawi National Payment System Bill, drafted in 2014 and circulated in the Malawi Gazette in 2015; and the 2017 Interoperability of Retail Payment Systems Directive, which mandated the connection of all licensed PSP's to Natswitch (Reserve Bank of Malawi 2017).³ Other notable regulations include the 2011 Mobile Payment Systems Act, 2016 Payment Systems Act, and 2019 directives around e-money schemes (IFC 2021). Supporting regulations include the AML/CFT/CPF law (2006), and the Electronic Transaction and Cyber Security Act (2016).

Inclusivity learnings

According to the IPS Inclusivity Spectrum outlined in Chapter 2, Natswitch ranks at the progressed level of inclusivity. Natswitch powers inclusive functionality for the most important use cases (P2P and P2B) and meets the inclusive channel requirements. As Natswitch launches

a broader range of use cases, it will further realize its inclusion goals. Adding centralized and transparent consumer recourse channels as well as additional input and equity opportunities for non-bank financial institutions would further raise the IPS's inclusivity level.

The following learnings emerged in the design and rollout of Natswitch:

→ **Demonstrating the business case for interoperability between participants ensures buy-in.** The development of a strong business case for interoperability was key to reduce resistance from the banking sector about integrating with non-bank participants. This was critical to the establishment of a cross-domain system.

→ **A domestic regulator with a payment digitalization agenda sets out conducive regulatory frameworks.** Private association-led payment initiatives that aim to deliver a societal good can be challenged if they lack appropriate oversight and direction from regulatory bodies. Several payments-related laws created the enabling environment for Natswitch and provided clarity to the industry about what is legally permissible within the system's operations. A strong legal framework supports the roll-out of an IPS that can drive inclusion.

→ **Central bank and development partner-led initiatives are key catalysts to driving implementation.** Although private sector-owned and governed, Natswitch was originally led by the RBM with input and funding from the World Bank. The RBM established committees with commercial players to ensure that industry views were incorporated during the system's design phase, ultimately leading to greater participant buy-in.

→ **Including multiple channels, instruments, and participant types enables scale.** An array of payment channels supported by the IPS and facilitated by different participant types, provides end-users with a variety of choices that suit their means and contexts. Natswitch supports important mobile money and banking channels. Further incorporating higher-volume use cases like G2P payments will provide the foundation for a digital value circulatory system. The cycle will only be complete with comprehensive P2B and B2B payments.

→ **Mandated interoperability ensures successful integration of non-bank and bank PSPs, but it is not a panacea.** Commercial bank participants may be reluctant to allow non-bank PSPs to integrate with the system, for reasons of market control and fear of losing competitive advantage. Directives around interoperability in Malawi ensured that private-sector resistance could not override the interoperability goals for the system. Interoperability mandates are effective tools by regulators to bring industry onboard. However, they do not guarantee scale for the switch, especially if there are local dominant PSPs processing a significant volume of on-us transactions. In the case of Natswitch, the switch continues to be under-utilized because most domestic retail traffic is routed as on-us transactions.

→ **An ISO 20022 API integration layer supports inclusion.** The enhanced interoperable technical features and improved governance aspects of ISO 20022 have the potential to enable Natswitch to reach greater scale, but the downside is the cost of system upgrades. An efficient ISO 20022 API layer creates an inclusive compromise, as it does not require an industry-wide upgrade and can support smaller institutions that focus on vulnerable market segments.

AfricaNenda

13th Floor, Delta Corner Tower 2
Chiromo Road, Westlands
PO Box 13796-00800
Nairobi, Kenya

 www.africanenda.org

 info@africanenda.org

 [@africanenda](https://www.linkedin.com/company/africanenda)

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