

Promoting Safe and Efficient Payment and Remittance Systems

Payment and remittance systems are vital to the modern economy. They help people and businesses make transactions conveniently, such as to buy groceries, shop online, pay suppliers and send money overseas. Given their importance, we regulate these systems and supervise industry players to promote safe and efficient payment and remittance systems.

Given the needs of the modern economy and the advancement in technology, we also seek to foster an enabling environment to promote greater adoption of electronic payment and remittance services. Besides enhancing productivity, increased adoption of such services would promote financial inclusion, financial integrity and catalyse growth in the digital economy. Additionally, we seek to future-proof our payment infrastructure to meet the emerging and future needs of the economy.

Key payment and remittance trends

In 2019, RENTAS¹ – Malaysia’s large-value payment system – and retail payment systems operated smoothly without any major disruptions.

Significant progress was made in efforts to promote greater adoption of e-payment and e-remittance services (Diagram 1). On average, Malaysians made 144 e-payment transactions each in 2019,

up from 125 in 2018. This is supported by widening acceptance of e-payments among merchants with 668,744 point-of-sale (POS) terminals deployed and over 288,000 Quick Response (QR) code payment registrations recorded as at end-2019, up from 514,818 POS terminals and over 65,000 QR registrations in 2018.

In tandem with the increased e-payment adoption, cheque usage continued to decline with 84.4 million cheques cleared in 2019, down from 101.4 million in 2018. Meanwhile, e-remittance services continued to gain traction with RM3.2 billion outward remittances conducted, up from RM2.5 billion in 2018. This is supported, among others, by the lower cost of e-remittance, which was reduced further to 1.9% of transaction value in 2019 compared to 2.4% through physical channels.

Ensuring safety and fostering confidence in payment and remittance systems

We conduct continuous oversight on RENTAS and retail payment systems to ensure their safety, reliability and resilience. In 2019, the focus of our oversight activities on RENTAS were directed at assessing the adequacy of controls to mitigate settlement failures, ensure business continuity and strengthen resilience against cyber threats.

We also conduct ongoing supervision on approved e-money issuers (EMIs) and licensed remittance service providers (RSPs) to assess risk management practices and compliance with regulatory requirements. During the year, we intensified our offsite surveillance of EMIs and also conducted onsite examinations on several key EMIs with sizeable market presence. Our supervisory reviews of these EMIs covered a number of issues and areas, including their financial strength,

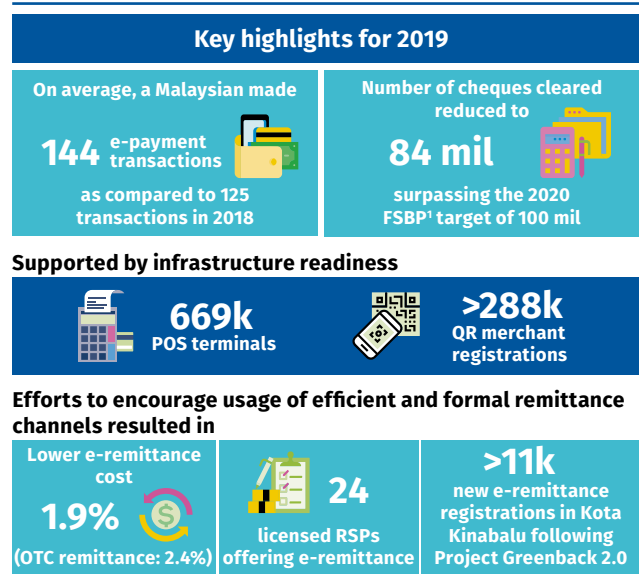
¹ Real-time Electronic Transfer of Funds and Securities System.

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management of customers' fund and fraud management practices. In supervising licensed RSPs, we also continue to use data analytics and modelling tools, including risk profiling, for more robust and targeted supervision.

To promote public confidence in payment and remittance systems, the Bank and the industry also continue to strengthen safeguards against payment fraud. From time to time, we issue security alerts to the industry on emerging methods used by fraudsters and require financial institutions to continually enhance their risk-mitigating controls. We also collaborate with industry groups and Government agencies to identify mitigating measures and enhance consumer education.

Diagram 1: Highlights for 2019



¹ Financial Sector Blueprint 2011 – 2020

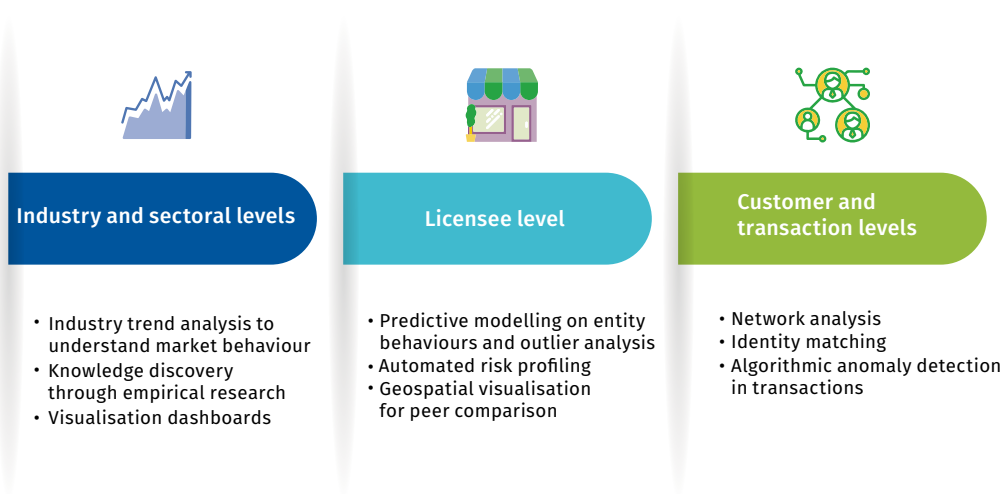
Smarter supervision and surveillance in the remittance industry

Advances in technology and the availability of better data have opened up new ways for us to radically improve the way we regulate and supervise financial institutions. In the area of remittances, the Bank has widened the use of supervisory technology (SupTech) to digitalise and analyse large volumes of reports, resulting in more efficient and proactive monitoring of risk compliance.

1. Data analytics as a supervision and surveillance tool

The remittance industry is susceptible to money laundering and terrorism financing (ML/TF) risks due to its cash-intensive and cross-border nature. Given this, we use predictive analytics on transactional data to monitor ML/TF risks at three levels, namely at the industry and sectoral levels, licensee level and at the customer and transaction levels.

Three levels of ML/TF risk monitoring



- **The use of data analytics has enabled smarter, faster and broader detection of potential exposure to illicit activities.** We have uncovered a number of transactions related to potential fraud, smuggling and other illicit activities.
- **Supervisory and surveillance functions have become more focused and data-driven.** This has contributed to thematic onsite supervisions such as investigating anomalies in transaction pattern and customer behaviour, and surveillance activities, followed by proportionate enforcement actions. Empirical research using SupTech tools has also contributed to evidence-based policymaking in the remittance industry.
- **Data analytics outcomes are documented into knowledge products which are shared with parties of interest.** These include engagement with industry players to strengthen vigilance against misuse of formal remittance channels, and sharing of intelligence information with other law enforcement agencies to aid investigations.

2. Artificial intelligence: Today and beyond

In 2019, we started to explore the potential uses of machine learning and cloud computing to enhance our analytics work:

- **Developed an application programming interface (API)-based reporting system** to enable real-time report submission with automated data validation.
- **Leveraged on supervised and unsupervised machine learning techniques** for behaviour anomaly detection and surfacing of outlier transaction patterns.
- **Utilised optical character recognition (OCR) application** to convert regulatory submissions into machine-readable reports for further analysis.

Moving forward, the Bank will continue to explore the use of other innovative technologies to support our supervisory functions. Informed human judgment will remain important in understanding and validating the results of data analytics.

Promoting greater adoption of e-payment and e-remittance services

The Bank has been focusing our efforts to accelerate the country's migration to e-payments². These measures have enhanced the affordability, accessibility and quality of e-payment services in Malaysia.

In 2019, our efforts were directed at enabling the interoperability of electronic wallet (e-wallet) services offered by banks and non-bank EMIs. In a market where multiple e-wallet operators exist, seamless payments are key to improving customer experience. As envisaged under the Interoperable Credit Transfer Framework (ICTF), PayNet³ has implemented a shared payment infrastructure – Real-time Retail Payments Platform, or RPP in short – with fair and open access to banks and eligible

non-bank EMIs. With RPP, consumers and businesses can make and receive payments instantly drawing funds from bank accounts or e-money accounts.

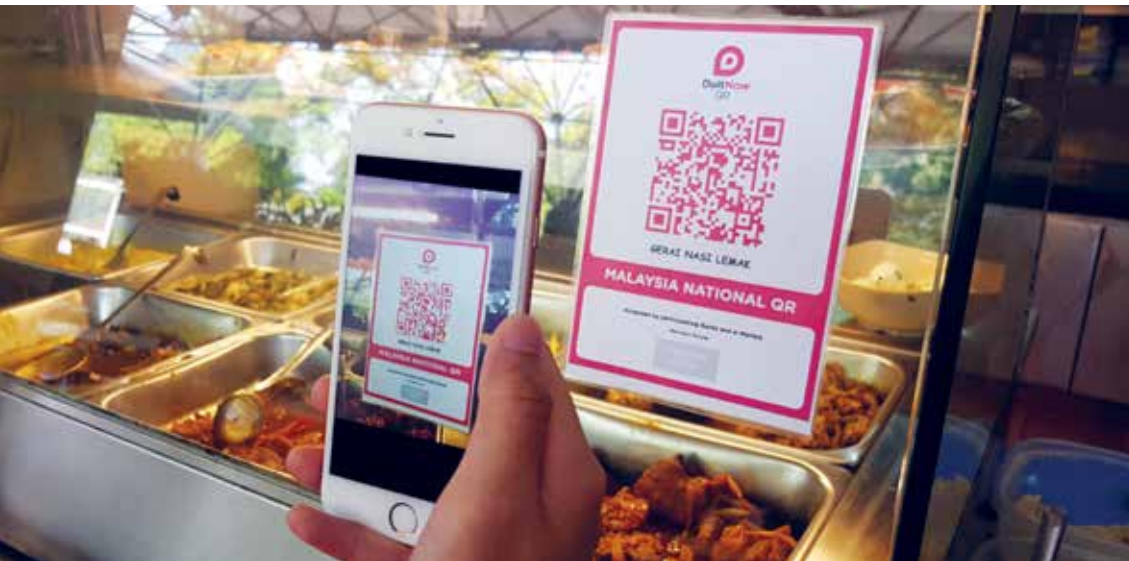
Two key services have since been offered on the RPP. The first service, DuitNow, enables a sender to transfer funds by referencing the mobile phone number, National Registration Identity Card number, or the business registration number of the recipient. The second service, DuitNow QR is a national QR payment solution that enables a customer of an e-wallet operator to seamlessly collect funds from customers of other participating e-wallet operators. We have been working closely with the key stakeholders to ensure an inclusive access arrangement for all interested participants. Besides banks, four non-bank EMIs have been on-boarded to the RPP to date.

In the remittance space, the year saw a number of efforts to digitalise business and operations to facilitate migration to formal remittance channels. In 2019, four licensed RSPs were approved to implement e-KYC⁴. We also worked with the Malaysian Association of Money Services Business (MAMSB) to

² Reforms in recent years include the Pricing Reform Framework (2013), e-Payment Incentive Fund (ePIF) Framework (2015), Payment Card Reform Framework (2015) and Interoperable Credit Transfer Framework (2018).

³ Payments Network Malaysia Sdn. Bhd. (PayNet) is the operator of the country's shared payment systems and financial market infrastructures, which is jointly owned by the Bank and 11 domestic banks.

⁴ For more information, refer to BNM Annual Report 2019 Chapter titled 'Promoting a Progressive and Inclusive Financial System'.



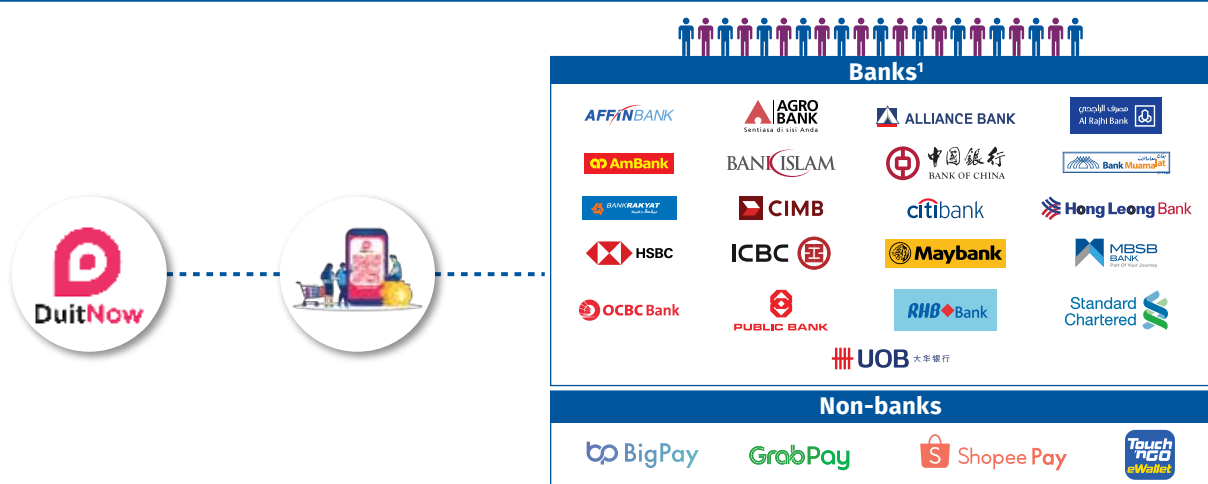
DuitNow QR is progressively being rolled out throughout 2020.

DuitNow QR: National QR payment solution

With the emergence of competing e-wallet operators in Malaysia, it is both time-consuming and inefficient for merchants to sign up with each operator and manually reconcile different sales revenue reports across different systems.

DuitNow QR addresses this pain point. Merchants only need to sign up with one e-wallet operator and display one unified QR code that can be used to accept payments from customers of other participating e-wallet operators.

Likewise, with a single account with an e-wallet operator, a customer will be able to make payment to merchants signed up with a participating DuitNow QR e-wallet operator.



1 Sign up with one e-wallet operator

2 Display your DuitNow QR

3 Start accepting payments from customers of all participating e-wallet operators²

¹ Including their Islamic banking subsidiary

² As at the date of publication, four participants (AmBank, Bank Muamalat, HSBC Bank and Public Bank) have implemented DuitNow QR on their mobile banking app. The remaining participants are expected to go live throughout 2020

enhance the Money Services Business Advisor mobile app. The app is an online aggregator that allows users to compare prices, locate the nearest licensed RSPs, review and lodge complaints on RSP services, and report on illegal RSP activities to the Bank.

Our efforts to promote the adoption of e-payment services also involve us working closely with target groups and stakeholders. In 2019, we continued to participate in a variety of platforms involving various groups, such as consumer associations, SMEs and Government agencies. The Bank also continued to encourage and support efforts to address challenges hindering the adoption of e-payments in the public sector. Encouraging progress has been made to date, with 52.2% of payments collected by Federal Government agencies through electronic channels in 2019, up from 36.0% in 2015⁵.

We also conducted a number of outreach and awareness programmes in select geographies. For example, our “Bayo Dok Guna Pitih” (*pay without physical cash*) programme to encourage the adoption of e-payments in Pulau Redang saw almost 75% of SMEs on the island starting to accept e-payments. In Kota Kinabalu, we collaborated with the World Bank, MAMSB and remittance providers on Project Greenback 2.0, an initiative to promote the use of formal remittance channels among migrant communities. This has resulted in a lower cost of remittance in Sabah, which declined from 4.5% in 2018 to 2.2% in 2019, well below the United Nations’ Sustainable Development Goals (SDG) target of 3.0%. Smaller scale e-remittance carnivals were also organised at several locations in the Klang Valley with higher concentration of migrant workers.

A BNM representative demonstrating how to use e-remittance services.

⁵ Source: Malaysian Administrative Modernisation and Management Planning Unit (MAMPU).

Future-proofing key payment infrastructures

In 2019, we embarked on a number of initiatives to future-proof RENTAS to meet evolving user demands.

Since 2008, we have outsourced the operations of RENTAS to PayNet to ensure segregation between the operator and oversight functions. The IT infrastructure and responsibility for IT support continue to reside with the Bank. This is supported by two service level agreements that outline the responsibilities of the Bank and PayNet in ensuring the safety, efficiency, and reliability of RENTAS. As the overseer of RENTAS, we also issue supervisory expectations on PayNet.

To strengthen end-to-end risk management in an era of heightened cybersecurity risk, the Bank will transition to an operating model where we will operate RENTAS directly, in addition to providing IT support for the system. In line with international best practices, this will be framed by clear and transparent governance arrangements. These include segregating the oversight and operator functions within the Bank, and establishing a dedicated committee to oversee the operations, risk management and governance of RENTAS. The Bank expects to assume operations of RENTAS by end-2021.



Regulating digital assets¹ in Malaysia

Privately-issued digital assets have attracted significant attention in recent times. However, they are not generally used to make payments as they lack the characteristics of money and suffer from various limitations, including price volatility and vulnerability to cyber threats. As such, we continue to remind members of the public that digital assets are not legal tender and to be cautious when dealing in digital assets.

The use of digital assets for making payments is subject to the Bank's laws and regulations. This is necessary to promote stability in our financial and monetary system. Securities Commission Malaysia regulates the issuance of digital assets for fundraising purposes and the trading of digital assets. It seeks to ensure that investors are protected and to promote fair and orderly trading. Digital assets activities are also subject to anti-money laundering and counter terrorism financing (AML/CFT) regulations administered by the respective authorities.

There is also growing awareness that the underlying technology for digital assets – distributed ledger technology – may have the potential to enhance existing payment methods. Consequently, the central bank community is exploring the merits and feasibility of issuing central bank digital currencies (CBDC). The Bank is no exception, and we continue to engage closely in discussions surrounding CBDC with other central banks.

¹ Digital asset broadly refers to a digital representation of value that can be transferred, stored or traded electronically which generally uses cryptography and distributed ledger technology.

To strengthen the operational resilience of RENTAS, we established a third-level backup facility in November 2019 to host a Mini RENTAS. As a smaller scale application of RENTAS, Mini RENTAS serves as a contingency to ensure resilience against operational disruptions from an unlikely scenario where both the primary production site and recovery centre for RENTAS are down simultaneously.

Beyond domestic payments, enhancing the efficiency of cross-border payments is also critical given the increasing cross-border trade, e-commerce and tourism activities. At the ASEAN level, efforts have been made to foster greater regional integration through linkages of the real-time retail payment infrastructures (RT-RPS). Through our participation in the ASEAN Working Committee for Payment and Settlement Systems, we contributed towards the establishment of the ASEAN Payments Policy Framework which comprises a set of principles to facilitate the linkages of RT-RPS. We also entered into a Memorandum of Understanding with Bank Indonesia to foster closer collaboration in financial innovation, including by exploring the establishment of a retail payment linkage between Malaysia and

Indonesia. Similar initiatives are also being explored with other ASEAN countries, including Singapore and Thailand.

Going forward

The Bank will continue to direct its regulatory and supervisory resources towards safeguarding the safety and soundness of payment and remittance systems. We will also step up efforts to increase public confidence and acceptance of e-payment and e-remittance services, particularly among underserved segments.

The Bank will also work to future-proof the country's payment infrastructure to meet evolving market needs, including by outlining the future payment systems development agenda and formulating a holistic strategy for migration of payment systems to ISO 20022. As a global messaging standard with richer data content, ISO 20022 has the potential to drive greater efficiency and facilitate industry players to deliver innovative financial services to their customers.