Modernising payment systems in Indonesia

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Background

Up to the late 1980s the primary means of payment in Indonesia, in common with many countries, was cash, as in fact is still the case. All other payments were made using traditional paper-based debit and credit payment instruments, tailored to suit local conditions over time.

The payment system in Indonesia consisted of a number of manual paper clearing centres across the country, which were operated by Bank Indonesia as the central bank. These centres operated six days a week and all interbank paper items were cleared locally. No national clearing service existed, and indeed none exists today.

The system worked efficiently at a local level, and because all interbank payments of all types (including transactions with the central bank) were cleared through the daily clearing, the results of that clearing represented the total position of each bank with respect to the other banks each day.

First steps

By the late 1980s pressure had mounted on the manual clearing houses in the major centres, to the point where automation of the clearing process became a necessity. We automated the clearing centres in Indonesia's three largest cities, Jakarta, Surabaya and Medan, in succession, with reader-sorters and a mainframe-based clearing package offering a fully automated clearing service for paper items.

At the same time, Bank Indonesia developed a so-called "semi-automatic clearing system" (SOKL) for the smaller regions. This system uses data from diskettes produced by the inputting banks to calculate the output positions, and the positions are checked against the paper items by the banks' representatives. This system has been implemented in about 40 locations. At each location the settlement is completed locally, because settlement accounts are not centralised.

This, in turn, produced a need for a system to move cash between Bank Indonesia branches to allow banks to keep their settlement accounts at every location in credit at all times, and we built a cash transfer system (SAKTI) to accommodate this need.

By 1995 these developments were largely complete, and significant benefits were being realised from the new systems. Because the focus was on technology and technological improvement, the term "payment system" meant little or nothing to Bank Indonesia. Furthermore, our vision was determined by our Central Bank Act, which sets out Bank Indonesia's duty to operate the clearing systems but otherwise does not address general payment system issues at all.

A new vision for Indonesia

A number of visitors to Bank Indonesia during the early 1990s brought with them the concept of a national payment system. Literature started arriving from various quarters which contained references to the "payment system" and staff at Bank Indonesia sought to understand what was meant. Needless to say, there were many views on the subject once it became a topic of discussion. Some equated the term "payment system" with money market activities, others with clearing (indeed both were incorporated into the same department at the Bank). Others thought it concerned the new ATMs which were arriving on the commercial scene.

It was apparent that some form of clarification was needed, and Bank Indonesia hosted a Payment Systems Seminar with speakers from six countries which was attended by top officials of Indonesia's major banks. With hindsight, this seminar was crucial in establishing the importance of the payment system with a large number of Bank Indonesia staff, and in generating the momentum needed to be aware that many payment system issues needed attention, and that something had to be done about them.

We formed a Payment System Working Group with representatives of all major departments of the Bank, and charged them with producing an assessment of the current payment system in Indonesia and a vision for

the future. To assist the Working Group, a firm of international payment system consultants was appointed to prepare a Blueprint and Development Plan for the future. While the documents that were produced in the course of our work are obviously important (and they include an Indonesian equivalent of the BIS "Red Book"), the Working Group also worked closely with the consultants throughout the development process in a series of a dozen or more workshops, some lasting half a day and some two or more days, to address and discuss specific payment system issues. This interaction between Bank Indonesia staff and payment system experts was vital in establishing common perceptions and payment system terminology throughout the Bank and in defining the scope of the payment system and the Bank's role in its future development.

Implementation of the reform programme

One of the outcomes of the Blueprint project was a list of 22 major projects that needed to be addressed to reform the national payment system. These projects included systems development projects covering national clearing, high-value payment processing, retail electronic payment processing and so on. With the automation of Indonesia's payment system, increased pressure on the Bank's own computer systems means that our accounting system, fund management systems, internal network and so on need to be strengthened. A number of institutions, such as a National Payments Council, will be set up. Finally, a consistent policy and legal framework for the payment systems had to be established.

To undertake a single project involving fundamental change is difficult enough. To embark on a reform programme comprising 22 projects is a daunting experience. Nonetheless, our Board of Managing Directors and Governor were committed to change and progress, and this commitment has been vital to our ability to finance and support the various initiatives we have undertaken. Payment systems development is expensive, and in a country of 200 million people and over 220 commercial banks, its scope is necessarily large.

Challenges faced

In the course of the first two years of the payment system reform programme we have faced many challenges and been involved in much discussion and debate. The following issues relating to the implementation of changes in our payment system have arisen so far during the reform process.

Managing the reform process

As already noted, Bank Indonesia made an early decision to set up a specialist internal Working Group to take charge of payment system development. The members of the Group were drawn from many departments, so that each would be represented during the development process. The Heads of Department of five key departments formed the Steering Committee for the Blueprint development project. The process may sound simple, but it was the first major inter-departmental initiative undertaken by the Bank, and was therefore under more than the usual scrutiny. Members had to be released from their regular work in order to attend Working Group meetings, and this required a high degree of cooperation between departments. The results justified the approach. A broad cross-section of the Bank's staff became knowledgeable about many aspects of payment systems in less than a year, and an impetus was established which is still in place today. The Bank is in the process of establishing a Payment Systems Department, and some members of the Working Group will form the nucleus of this new department.

Education of central bank staff

Bank Indonesia employs about 8,000 staff in 42 locations. Each of our branches is responsible in one way or another for aspects of the payment system, through the distribution of cash, operation of the daily clearing, and maintenance of settlement accounts. The Working Group developed a communications programme to spread the "payment system message" to these staff at our annual planning meetings, through our monthly in-house magazine, and by adding payment systems modules to the curricula of staff training and management development courses.

Centralisation of settlement accounts

The system of maintaining separate settlement accounts at each of the Bank's branches is rapidly becoming outdated in a world of modern networks and real-time payments. The process of identifying the issues has raised many problems, from the technical requirements of maintaining a consolidated position (a fundamental change for banks' management) to more emotive issues such as the fact that the balance sheets of Bank Indonesia branches will be much less impressive without the settlement accounts being recorded in them. Banking supervision is carried out throughout Indonesia at bank branch level, and the removal of local settlement accounts will mean that provincial branches will no longer be "mini-banks" with their own central bank settlement accounts but will, of necessity, be part of a single bank, with a single head office account. That will have an impact on the way banking supervision is undertaken.

Management of settlement accounts

It was noted earlier that, in the past, the local clearing centres processed all interbank payments each day. That meant that a bank's position with respect to other banks could be obtained by simply looking at the results of the daily clearing. With a move to multiple clearing systems, such as paper clearing, money market clearing, ATM clearing, and an RTGS system in the future, the results of the daily paper clearing no longer represent the total picture. Banks must now look at their settlement accounts, and Bank Indonesia is developing systems to allow banks to manage these accounts which will show cash transactions, paper clearing transactions, and electronic transactions in the future. This may sound very obvious but it is not necessarily so to banks and even to some departments within the central bank that were accustomed to clearing all payments through the daily clearing, often using the clearing as a substitute for accounting entries rather than posting them direct to our books. The primary impact of the change has been on some of Bank Indonesia's departmental systems, and in the manner in which they link to our accounting system, rather than on the clearing system itself.

Systems acquisition

The specification and acquisition of new systems is never an easy task. When a system automates a previously manual function the system requirements and vision are relatively easily established. In our payment systems development, we are developing entirely new payment services, and the development of a shared and consistent vision has not always been easy. The straightforward language of cheque processing has been enhanced with concepts such as DVP, PVP and Lamfalussy standards. Trying to work out what our future requirements will be is not an easy undertaking, and it can be made more difficult if we are surrounded by vendors offering apparently "ideal" solutions for our perceived needs. We have responded by studying many solutions in other countries, and developing an understanding of the strengths and weaknesses of various systems, which may be entirely satisfactory in one country, but not necessarily transportable to a large and diverse country such as Indonesia. Our skills in specifying systems are therefore being developed, and we are learning much about what to do, and in some cases what not to do, by experience.

Clearing cycle

The introduction of new systems means that previously established cut-off and reporting times for clearing activities may not necessarily be appropriate. We have studied closely the effects of moving the clearing and settlement cycle, following such a move last year. We have learned that the development of a good clearing cycle is no simple task. The clearing house, the commercial banks and even the bank customers are all affected by different cut-off and processing times. Issues as diverse as Jakarta's traffic, the availability of parking spaces and the working hours of bank treasurers have all had their part to play in our discussions. The balancing of the various interests has not been an easy task, and we have learned that there is probably no perfect clearing cycle that makes everybody happy at the same time.

Legal framework

Indonesia has a Commercial Code based on the European model, which sets out the legal basis for cheques and bills of exchange. Clearly, these provisions are inadequate for a payment system based on computers communicating by way of electronic messages. The introduction of new legislation is not a quick process, and in particular the matters that require legislation need to be considered carefully. When we look outside

Indonesia we see legislation on various aspects such as digital signatures, electronic commerce, UNCITRAL model laws, and so on. The challenge faced by our legal people has been not only to understand the technology supporting our proposed payment system, but to draft the laws in such a way that they will remain robust in a future environment of continued rapid technological change.

Payment system risk management

Given some of the earlier comments, it will not come as a surprise that payment system risk management has not yet been implemented to any great extent in Indonesia. The shifting of payment system risk from the central bank to the payment system participants has required a process of education inside and outside the Bank, and is still far from complete. Agreement in principle to the concept has been reached. It is fair to say that issues relating to the provision of basic payment infrastructure take first priority, although we are taking advantage of new regulations governing clearing houses to incorporate several requirements relating to payment system risk management. The proposed regulations will require clearing operators to provide participants with information and facilities to allow them to manage their risks, and ongoing adherence to the Lamfalussy minimum standards will be a requirement for clearing operators. This regulatory approach may be unfashionable in some circles, but we believe it is effective, and it allows us to keep our reform programme moving forward.