

# **Managing change in the domestic payment and settlement systems of the Kingdom of Saudi Arabia**

Jammaz Abdullah Al-Suhaimi

## **Background**

It is now some 11 years since SAMA (the Saudi Arabian Monetary Agency) launched its first initiative to create a modern payments system for the Kingdom. The starting-point was the need to improve the system for clearing cheques, at that time the only important non-cash payment instrument in use, and essentially limited to wholesale transactions. Cheques were then cleared locally in the centres where SAMA had branches. The cheques were listed on hand-operated machines and settlement was carried out each day after extensive reconciliation.

In cooperation with the commercial banks, SAMA designed completely new procedures and rules for interbank clearing and settlement. New cheques were designed in collaboration with each bank, incorporating standard layouts. MICR code lines were designed to meet the Kingdom's geographical requirement. Full cheque personalisation was introduced at the outset in both Arabic and English according to the needs of the customers. Clearing computers were installed at the main SAMA branches and automated cheque processing successfully commenced in 1986.

On the retail payments side, however, Saudi Arabia was a cash-based society. Payment instruments based on deposit money had limited acceptance, so ready access to cash was a key customer requirement. In response to this, several Saudi banks had installed proprietary ATM networks in the mid-1980s, but these were of limited scope. Above all, there was no national ATM switch or established basis of reciprocity among the banks. SAMA saw the need to provide a neutral national transaction switch for the commercial banks. After initial feasibility studies and subsequent system design all ATMs in the Kingdom were linked so that all bank customers could draw cash at any ATM in the

Kingdom. The system was called the Saudi Payments Network (SPAN) and went live in April 1990.

While SPAN was being implemented we realised that it could serve as the backbone system for all retail payment card transactions in the Kingdom. Because the “banked” population was low and cheques were not widely used, Saudi Arabia had an opportunity to move from a currency-based economy to a deposit money society using electronic payment systems. Given the difficulties in displacing paper instruments experienced in other countries, we viewed this as a key advantage.

SPAN has lived up to expectations and has contributed significantly to strengthening the “banking habit”. There are now some 1,613 ATMs throughout the Kingdom in online daily operation processing over 50 million transactions per annum, with a daily value of over SR 100 million (US\$ 27 million).

In March 1993 SPAN was enhanced to support EFTPOS transactions. Approximately 15,000 retailers are equipped with point-of-sale terminals, with the 3.2 million SPAN cards serving as ATM and debit-POS cards. SPAN will continue to operate as the sole online point-of-sale network in the Kingdom. VISA and MasterCard transactions are now accepted by many SPAN terminals, with online connections to the bankcard switches overseas. We hope to eventually support all major credit and debit cards through a single device on the shop counter.

While these developments were taking place on the retail side, SAMA was pursuing two key initiatives in wholesale banking. First, all the Kingdom’s banks were linked to the S.W.I.F.T. network, a vital step for a country heavily engaged in international transactions. Secondly, we developed an electronic stock exchange for Saudi shares, the Electronic Securities Information System (ESIS).

ESIS is an electronic screen-based share trading and settlement system. Only Saudi banks are permitted to provide brokerage services to the public. SAMA operates the system and provides interbank settlement and book-entry securities transfer services to ESIS. SAMA also provides development and support of the system itself and acts as supervisor of the securities market.

Despite these developments, until the implementation of the RTGS system in May 1997 (called SARIE) interbank settlements in the Kingdom continued to be effected through the cheque clearings or account transfers at SAMA head office and branches.

The major milestones on the road to a modern payment system in Saudi Arabia were as follows:

- 1986: ACH (Automated Clearing House)
- 1989: The Kingdom’s banks joined S.W.I.F.T.
- 1990: ESIS (Electronic Securities Information System)
- 1990: SPAN (Saudi Payments Network)
- 1993: EFTPOS (electronic funds transfer at the point of sale)
- 1997: SARIE (EFT system – RTGS)

More details on the payment systems in Saudi Arabia can be found in the “Red Book” published by the BIS in February 1996.

### **The role of SAMA**

SAMA has a multiplicity of roles as the central bank and the banking and shares market supervisor. SAMA also acts as ombudsman of the financial markets and promotes cooperation among market participants.

SAMA’s role in payment systems has evolved from its broad mandate to maintain the safety and soundness of the Saudi banking and monetary systems. In the payment systems area SAMA has chosen a leadership role in establishing an integrated and comprehensive electronic payments infrastructure while continuing to support traditional payment vehicles such as cash and cheques. SAMA’s leadership role is essential in ensuring a rational and consistent national strategy for payment systems. This approach is based on the conviction that significant financial benefits would accrue to all financial market participants from a collaborative rather than a competitive approach to the development of a common payments infrastructure.

To implement its national payment systems strategy, SAMA established a Banking Technology Division which is responsible for the development and implementation of all national payment systems. It is also responsible for the day-to-day operation and enhancement of the payment, clearing and settlement systems in the Kingdom with the cooperation and participation of the local banks.

## Driving force for change

There were many reasons for SAMA to develop a modern payment system. SAMA recognised that the old payment and settlement arrangements inhibited the development of an active domestic interbank market. They also suffered from the slow and uncertain settlement by cheque and imposed a cumbersome correspondent banking role on SAMA.

SAMA commenced work on the development of an interbank EFT system in January 1995 after extensive study of interbank payment systems in G-10 countries.

SAMA had many objectives in building such a system. These included:

- greater efficiency in the banking system;
- improved risk monitoring and control by SAMA and the banks;
- facilitating the development of local financial markets through secure and efficient settlement;
- achieving international standards for certainty and finality of settlement of all interbank payments;
- developing a modern payment system which would support economic development;
- expanding the use of bank deposit money; and,
- protecting the banks' franchise in payments.

Our goal was to achieve an electronic infrastructure which is fully integrated, safe and cost-efficient, avoids unnecessary duplication where possible and is expandable to cater for future developments such as EDI, DVP and PVP.

## Approach

In order to learn from the experience of other countries we undertook a study of best international practices. The scope of this study was to identify best practice on a number of key issues including the EFT system operational approach; liquidity; risk management; pricing and incentives to use the system; and future perspectives.

We are very grateful for the support and assistance we received from many central banks and payment system providers. The information we

gained from such contacts has helped considerably in the development of our EFT system.

SAMA had already taken a number of decisions on the operating policies for the EFT system. All of these were fully vindicated by the best practices study. These included:

- consolidation of bank current accounts (previously, separate accounts were maintained by each bank at individual SAMA branches);
- the EFT system would be closely linked to SAMA's central accounting system;
- direct access to the system would be by banks only;
- fully collateralised daylight overdrafts would be provided;
- the system should operate central queuing with automatic cancellation at cut-off.

Our EFT system, called SARIE (Saudi Arabian Riyal Interbank Express) – the word SARIE in Arabic means fast – was brought into operation in May 1997. SARIE comprises a central system, located at and operated by SAMA, and gateways located at each bank linked to their main host systems. The bank gateways are linked to the central system via an X.25 network.

The key features of the system include:

- secure message transmission between the commercial banks and SAMA ensuring the authenticity and confidentiality of all data;
- an RTGS system providing for payment finality through debits and credits to banks' current accounts at SAMA in real time;
- incorporation of the net settlement positions of other clearings, i.e. cheque clearings, ESIS and SPAN as well as the net settlement positions from VISA and MasterCard;
- central queuing, with payment priorities set by the sending or paying bank;
- online payment scheduling tools available to bank treasurers together with real-time access to their own account balances and payment queues on the central system to enable them to effectively manage their accounts and queues;
- a gridlock resolution tool which enables SAMA to intervene to break payment gridlock situations in exceptional circumstances (responsibility for the provision of sufficient liquidity to meet all their settlement obligations rests with each bank along with full responsibility for managing all their outgoing payments);

- near 24-hour operation which allows for the transmission of forward value payments and direct debits (this feature provides the capability of overlapping business hours with other markets and key financial centres);
- a secure free format message facility for the exchange of messages between SAMA and bank treasurers.

SARIE handles interbank and customer payments for both high and low value:

- for same-day value and up to 14 days forward;
- as single and bulk messages;
- for both credit transfers and direct debits.

Same-day value payments are settled on a real-time basis, while forward value payments and direct debits are settled on their maturity date.

## Issues

The issues with which we had to deal in the course of the development and implementation of SARIE can be broadly divided into three categories: policy, business and technical.

We needed to deal with the following **policy** issues:

- weighing system complexity and cost against the potential benefits;
- assessing the benefits to be derived from using the system – benefits to SAMA (risk reduction), benefits to the commercial banks (efficiency, risk management, customer service), benefits to customers (corporate, retail, utility companies);
- allocation of the initial capital cost;
- recovery of costs – per-item fee, membership fee, etc.;
- balance between cost recovery and incentives to use the system;
- costs at individual bank level;
- intraday liquidity, collateral rules regarding “eligible assets”;
- supply of “eligible assets”;
- history of risk to date;
- operating rules and regulations;
- security and confidentiality of all data.

We had to address the following **business** issues:

- roles and responsibilities, during the preparatory stage and once the system was operational;
- membership – 12 commercial banks;
- minimum and maximum value of individual payments;
- value-dating of payments – same-day value only, or same-day and forward value;
- synchronisation of payment flows;
- need for scheduling of payments;
- operating hours.

The **technical** issues which we had to address included:

- volumes – present and projected for the next five years;
- performance – peaks/averages, response time;
- linkages to other systems, i.e. cheque clearing, SPAN (ATM network), ESIS (stock exchange system), credit card settlements, bank host systems, and SAMA’s main accounting system;
- queuing;
- message formats – range and types of messages to be supported;
- system architecture;
- contingency – level of dependence on the system;
- ability to expand the system to meet future requirements.

## Cooperation

A key factor in our success to date has been the high level of cooperation we have received from many payment system providers and regulatory authorities and the commercial banks in the Kingdom. This has enabled us to quickly adapt and apply the lessons learned in developing our payments system.

We established a number of working groups which played a vital role in the development and implementation of SARIE. The members of these working groups were drawn from the commercial banks and SAMA. The following is a brief description of the various working groups.

### *Project Managers*

This group handled the overall coordination of the project between

SAMA and the banks. Overall project management was provided by SAMA.

#### *Operating Rules and Regulations*

This working group produced the rules and regulations governing all aspects of SARIE. It discussed and agreed practical business procedures for the use of the system and agreed the daily time schedules and cut-off times.

#### *Security and Audit*

This group established the SARIE Security Policy, Standards and Procedures.

#### *Testing and Certification*

All testing between the banks and SAMA was coordinated through this group. It also coordinated all activities in relation to the certification of individual bank systems.

#### *Documentation and Training*

This group coordinated the wide range of training courses comprising some 50 courses covering both technical and business subjects and totalling 160 days. It also reviewed the supporting user documentation.

As well as these specific working groups which were set up to deal with the issues relating to the development and implementation of SARIE, we also had extensive discussions with the banks' Treasurers Committee on the subject of limits and collateral as well as the overall operation of the system.

Now that the system is in operation we have established a SARIE User Group which meets on a regular basis to exchange ideas and address common issues and concerns relating to the SARIE system.

### **The policies**

#### *Limits and collateral*

Each bank may have an intraday overdraft limit on its settlement account

with SAMA. These limits are fully collateralised with Saudi Arabian government securities. The intraday overdraft limit is the maximum amount by which a bank may be in debit at any time during the day. Payments which would breach the limit are queued in the central system until sufficient funds become available in the form of either credits for incoming settled payments or an approved increase in the limit. Each bank's settlement account must be in credit at the end of the day.

It is the policy of SAMA that the level of intraday overdraft limits should be sufficient to ensure the smooth functioning of SARIE and to minimise delays in the settlement of payments while, at the same time, ensuring that the overall safety of the payment system is maintained. Banks are responsible for applying to SAMA for the intraday overdraft limit that they require. Sanctioning these limits is at the discretion of SAMA.

#### *Pricing*

The initial cost of the shared payment system was borne by SAMA and will be recovered through transaction fees. The central system is operated by SAMA.

One aim of the pricing policy is to maximise the efficiency of the banking system by promoting the use of SARIE and encouraging customers to switch from manual to automated procedures. The other objective is to recover the cost of the investment which SAMA has made in the development and implementation of the system, and the costs which SAMA incurs in the ongoing operation of the system. SAMA intends to recover its capital investment over a period of seven years and to recover operating costs as soon as possible after the year in which they are incurred.

We have not, at this stage, introduced any exceptional charges and penalties. We will review our pricing policy from time to time and, if deemed necessary, we will introduce pricing incentives and penalties aimed at encouraging and enforcing good behaviour, particularly in the area of maximising liquidity through the early transmission of payments.

#### *Benefits*

SARIE has already had a significant impact on risk reduction in our interbank payments business. Within the first three months of operation

we have seen close to 90% of the value of all payments between banks being settled over SARIE on an RTGS basis in a single, secure electronic environment.

The commercial banks in the Kingdom are now beginning to reap the rewards of improved efficiency in their payments processing. They will continue to build on these benefits over the coming years as the use of retail and corporate payments and, in particular, electronic payroll transfers and direct debits increases. The banks' customers have also benefited from the improved efficiency of the banking system, which has resulted in significant reductions in the time taken for the transmission of payments between banks.

## **Conclusion**

We believe that we have now put in place a sound payments infrastructure within the Kingdom which meets the highest international standards. We have made considerable progress in meeting our objective of having a modern payment system which significantly improves the efficiency and safety of the banking system for the benefit of all participants.

While we are pleased with our progress to date, we must not rest on our laurels but continue to look to the future. We expect that e-money (electronic purse) [DVP and EDI] and electronic commerce will be the major developments in the period immediately ahead, and we envisage launching initiatives in these areas in the near future.

We look forward to making further progress in the payments field and hope that we will continue to benefit from the kind assistance we have experienced to date from our many friends in the payments business.