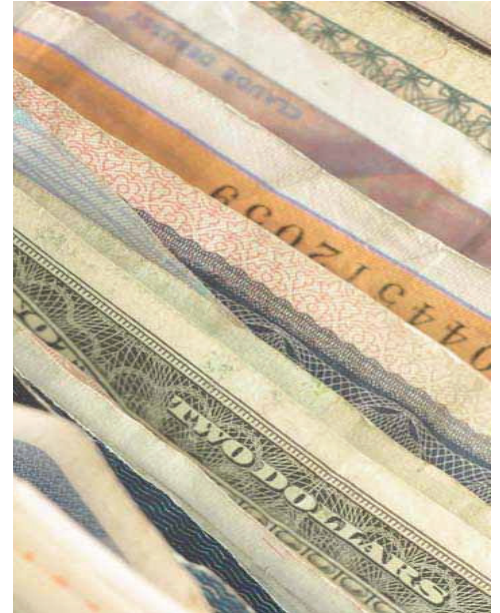


### Introduction

Central Bank XYZ reviewed its banknote processing policy several years ago and decided to outsource note processing to the commercial sector but retain responsibility for note issue and destruction. The commercial sector in the country now operates on a regional basis providing note processing and distribution facilities in a number of commercial bank and cash in transit (CIT) cash centres throughout the country. In these cash centres used notes are received from commercial banks and retail organisations. The notes are then processed on a wide range of equipment from different manufacturers (G&D, DLR, Toshiba, Glory, Cummins, etc.) these systems all operate at different speeds to assess note condition, authenticity and inventories. Fit notes are re-issued for either machine or over the counter distribution with unfit notes returned to the Central Bank for destruction. The commercial processors are responsible for reporting and monitoring note volumes in circulation and also the quality of note processed to a set of criteria agreed with the Central Bank.



The CIT outsource partners use their range of note sorting equipment to service contracts they have with the major commercial banks in the country for the provision of currency for the ATM network. These contracts define the quality of notes to be issued to the banks and also impose machine uptime and service levels linked to note condition.

All of the operations are managed by the processors own staff who are responsible for productivity and note yields for their individual operation and are able to adjust performance criteria of the systems within given parameters to deliver their performance objectives and meet operational targets. Note yield requirements for commercial use are often in direct conflict with note quality standards for the Central Bank, resulting in recirculation of below standard notes.

All notes are held by the commercial sector on behalf of the Central Bank to agreed limits and the Bank reserves the right to penalise any miss classification of notes or miss management of inventory levels in contravention of its guidelines.

### Problem

The Bank has received criticism for a gradual decline in the perceived quality of notes in circulation. In particular with respect to lower denomination notes widely used, but outside the ATM network. The Bank has however not been able to accurately quantify this perception. In an attempt to gain a better understanding of the note quality in circulation the Bank undertakes a regular survey of notes at cash centres to assess how the mix of currency in circulation compares with the data from the outsource partners. These samples are based on a small quantity of circulated notes which are processed and the output compared with the feedback from the commercial processors. Based on the feedback from these random samples the Bank is aware that there are significant differences in note standards across the country and between processors, but the Bank does not have sufficient data to make an overall assessment and implement any corrective action.

### Requirement

In order to manage its note inventories the Bank needs accurate and timely information on the quality and distribution of notes nationally. With this the Bank could make better informed decisions on new note production and series introduction. The Bank could also manage the penalty versus reward interface with the commercial partners in a more effective manner. The current manual sampling of notes is both time consuming and ultimately ineffective since the volumes analysed are unrepresentative of the national distribution. The Bank needs a more substantive model that gives statistically reliable, independent data for the note quality and does so across all equipment and processor models.

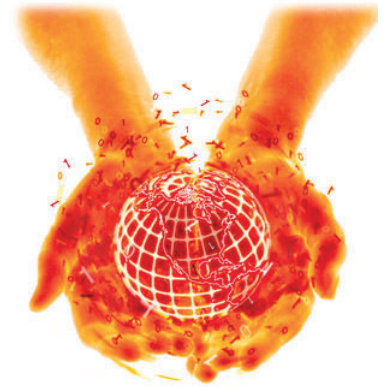


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### ICS proposal

ICS proposed that all partners would be linked to the Central Bank via a dedicated Internet link which would draw information from the processing equipment and make that available to staff at the Central Bank. The information is sourced by an dedicated, independent ICS detector which monitors all notes processed and reports on quality of the notes by denomination, location and machine type. This monitoring and reporting activity is complimentary to the operational process of the partners and does not impact their own processes or the management of their business activities. Rather it supports these and ensures that there is compatibility and consistency of reporting at all levels. The cash centre managers continue to operate independently of the ICS solution but they may also use the data from ICS to corroborate and validate the information from the vendor equipment. Centrally the Bank is able to consolidate data from all processing locations and equipment types into one report which present a total view of the note circulation and conditions. This report could then be used to provide an overview of the trends in note quality throughout the country. The Bank benefits from statistics from the same consistent, independent detectors and Central Bank set parameters, without impacting commercial operations. ICS will install the detectors into the processing equipment in conjunction with the Central Bank and will set up a service agreement for the detectors directly with each of the commercial processors. This is delivered independently of the equipment vendors and the ICS solution operates in a totally free-standing manner, allowing the local management to retain their system control and existing vendor relationships. Neither the hardware, software, communications, data processing or reporting relies on the host equipment.

The ICS detectors are non end-user adjustable and do not require any maintenance beyond simple regular cleaning which is performed as part of the normal operator tasks. The implementation of the solution does not impact the operations, flexibility or service arrangements of the host systems and the local staff are able to retain their operational flexibility whilst at the same time providing the Central Bank with a complete insight into the quality of currency in circulation in a consolidated manner. Optionally the commercial banks and CITs could also have the data available for their own use in monitoring service level agreements, operational productivity, or note quality issues in ATMs.



### Results

The implementation of the solution will enable the Bank to establish a much more accurate view of the quality of currency in circulation and to do so in a timely and cost effective manner which would not have been possible under the former system of field sampling. The Bank will be able, from one consolidated data source, to see what is happening to note condition geographically over time and also to assess the performance of its outsource partners in a constant manner. Any potential issues relating to note quality can be addressed more effectively and decisions on note print volumes and distribution can be made based on reliable and credible data. For the outsource partners the solution will mean that previous uncertainty and confusion caused by machine variances will be removed and all parties will be working from a common platform. It will also enable the outsource partners to reduce their discrepancies and consequently the levels of fines and penalties.