Speech

SMART CARDS TECHNOLOGY-IMPLICATIONS FOR THE CENTRAL BANK *

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I am glad to be here to participate in the Pilot Run of Project Smart Rupees System (SMARS) at IIT, Powai. This project is not merely a forerunner in the use of electronic means for effecting retail payments but also an important signal about the capability of Indian technologists, academics, bankers and business persons to interface and interact to bring about sophisticated technology applications that affect our daily lives.

2. The smart card technology is a relative newcomer to the retail payment scene. No wonder there is very little operational experience with the development and use of smart cards, not to speak of technologies associated with smart cards. There are many in India who do not know what a smart card is and how it is distinct from a credit card. A smart card, by definition, has an integrated circuit with a microprocessor chip embedded in it, which gives it enormous versatility. It could perform calculations, maintain records, act as an electronic purse storing electronic money. It is as e-money that the smart card is most used and can be used in different areas of consumption of goods and services -with limits set against each of the defined areas. It is essentially a chip or memory card.

3. The project SMARS started with the idea of making the IIT in Mumbai a cashless campus. This is a project in which the Indian Institute of Technology, Powai, the Institute for Development and Research in Banking Technology, Hyderabad, hardware and software vendors, and two commercial banks (State Bank of India and Canara Bank) have worked in concert as partners. The Reserve Bank of India has involved itself in the project to encourage market participants to develop a common technical infrastructure with a view to promoting the inter-operability of competing card schemes, as well as to encourage wider acceptability of this sophisticated retail payment mode.

*** Address by Dr. A. Vasudevan, Executive Director, Reserve Bank of India, as Chief Guest at the Indian Institute of Technology, Powai, Mumbai on December 3, 1998 at the time of the 'SMARS' pilot Launch.**

4. Whenever a payment mode is introduced or is adopted there arise a number of for the working of the financial system as a whole. From the point of view of a Central Bank, the issue of maintenance of reserve requirement on the balances held by banks against the smart cards issued, i.e., outstanding balances on cards takes a tricky hue. One view is that the deposits held by banks against the amounts loaded on the smart cards (which have not been spent by the card holders) are balance sheet liabilities of the issuing bankers and should therefore form a part of their net demand and time liabilities. To be more specific, the point of concern here is : how does one compute the unspent balance on the cards? Another issue relates to the payment of interest on the card account. During the loading operation, the deposit account of the card holder is debited and credit is given to a centralised card account. The issue relates to whether the concerned account holder should get interest at the savings bank rate till the date he actually spends the money and his card account is debited. If the information flows are weak and banking organisations are not effective in posting the debits quickly, they would incur losses which may not be recouped by hikes in card fees. In any case, high card fees would be the sure way of discouraging the customers from using smart cards. Such a move in the initial stages of development of smart cards could well mean that the acceptability of cards as a means of payment would take enormously long period of time.

5. The Reserve Bank, however, has to be smart enough to monitor the issuance and use of smart cards for reasons of sound and efficient payments system. Banks generally issue cards as in Europe, but non-banks too could do so as in the United States, in which case surveillance of the Central banks in this regard will get stretched. If the number of issuers is limited, the advantages of competition in terms of cost and the efficiency of customer services may not be reaped by the users of smart cards. On the other hand, if there is a large number of issuers, including non-banks, both regulatory and supervisory mechanisms on banks and non-banks will need to be strong, efficient and symmetrical so as to reduce possibilities of systemic risks. One needs to, therefore, take a definitive position as to whether only banks should issue smart cards, and if so, whether there should be some criteria for issuance itself. This question needs to be answered in the Indian context to ensure that the payments mode through smart card is recognised and accepted by the public.

6. The success of the smart card projections depends on the efficiency of the inter-institutional clearing and settlement arrangements associated with the product. Since the Central Bank would have to exercise payment oversight the critical question of finality of settlement would understandably be of an over/arching concern. When will settlement be deemed as final? If an issuer goes bankrupt, is there any legal validity to the payments already made through the smart card? Who bears the liability for transactions in the pipeline? These and other related matters would need to be resolved with appropriate legal and institutional mechanisms set in place.

7. Another concern of the Central Bank would be when the security of the entire scheme is breached, losses may fall on the consumers or business entities or issuers or all of them in different degrees. While most smart card products build-in security features such as encryption, prescriptions of maximum monetary limits and authorisations, and are tamper resistant, the system, operators, have to be extremely vigilant and monitor each and every transaction. The systems, therefore, have to provide clear-cut guidelines for operations, help build central data base and set out the precautions that need to be followed in all banks which issue smart cards. The system operators will have to be thoroughly trained in all areas of operations that surround the scheme. Cynics might say that in spite of all precautions and in-built systems, it would become difficult to detect security breach when it occurs, but no new product can be introduced if one were to be so low about our abilities to address technology problems. This argument, however, may not pose a problem for quite some time since the amounts involved on each card may not be significant and the number of cards issued themselves would probably be limited till there is general acceptability of Smart Cards as a payment mode.

8. The implications of e-money for the implementation of monetary policy would be an area of major interest for Central banks. Although e-money is regarded as substituting deposits, its impact on transactions velocity, as smart cards become popular, could bring in its wake the need to closely monitor the demand for bank reserves so that the Central bank would be able to take steps to economise in the supply of bank reserves. An extensive spread of e-money could also impact on the balance sheets of Central Banks, with implications for the use of policy tools including open market operations.

9. There is also the need from a Central Bank perspective to examine legal issues as to whether

(a) the existing banking and / or other regulations apply to e-money,

(b) the jurisdiction would cover cross-border movements of e-money over networks, and (c) the schemes should allow e-money to be offered in more than one currency. There is also the question whether a Central bank itself could issue e-money. These issues need to be carefully studied from the viewpoint of efficient conduct of policies that aim to achieve certain final objectives through realisation of optimal quantity or rate variables at the intermediate stage.

10. While research work on the operations of payment modes and their implications for policy conduct would and indeed should go on, it is essential to bring about technological changes in retail payment modes for the benefit of consumers. Indeed, this being the case, this project at the pilot phase has done the right thing of not imposing service charges or membership fees and of incorporating necessary security features so as to give incentives to potential users and for giving confidence to the participants of the financial system about its efficacy. This project will surely get extended and will pave way for use of more and more smart cards not only in this city but also elsewhere. I take this opportunity of congratulating all the project partners, and the IIT in particular for so readily volunteering to be the harbinger of smart card movement in India.