

The Reserve Bank continued its efforts towards building robust and secure payment and settlement systems for achieving a less-cash society. In this direction, it published Vision 2018 which highlights the need for making regulations more responsive to technological developments and innovations in the payments space. This will be complemented by enhanced supervision of payment system operators, improvement in customer grievance redressal mechanisms and strengthening of the payments infrastructure. Further, the Reserve Bank focused on enhancements in the IT infrastructure for internal users and bringing about improved efficiency and coverage for government transactions.

DEPARTMENT OF PAYMENT AND SETTLEMENT SYSTEMS (DPSS)

IX.1 The department continued its focus on migrating to a 'less-cash' society through a process of stakeholder consultation for developing a regulatory framework that is responsive to emerging developments and innovations. Among other things, enhancement of infrastructure with multiple channels and products for payment services has widened the customer base.

Trend and Progress in Payment Systems

IX.2 Overall, the payment and settlement systems registered robust growth during 2015-16, with volumes and value growing at 49.5 per cent and 9.1 per cent, respectively. The efforts made by the Reserve Bank for migration to electronic payments are reflected in high volumes witnessed under various electronic payment systems during 2015-16 (Table IX.1). In volume terms, the share of electronic transactions in total transactions moved up to 84.4 per cent from 74.6 per cent in the previous year. In value terms, their share moved up to 95.2 per cent from 94.6 per cent.

Electronic Payments

IX.3 At end-March 2016, the national electronic funds transfer (NEFT) facility was available through

130,013 branches of 172 banks, in addition to business correspondent (BC) outlets. NEFT handled 1.2 billion transactions valued at around ₹83 trillion, up from 928 million transactions for ₹60 trillion in the previous year. In March 2016, NEFT processed the largest ever monthly volume of 129 million transactions.

IX.4 During 2015-16, 786 million transactions valued at around ₹2.4 trillion were carried out through credit cards, while 1.2 billion transactions valued at ₹1.6 trillion were carried out through debit cards. Prepaid payment instruments (PPIs) recorded 748 million transactions valued at ₹488 billion as compared to 314 million transactions valued at ₹212 billion in the previous year. Mobile banking service growth surged by 126.6 per cent in terms of volume and 290.3 per cent in terms of value handling 389 million transactions valued at ₹4 trillion during the year.

Authorisation of Payment Systems

IX.5 The number of authorised payment system operators stood at 71 comprising PPI issuers, cross-border money transfer service providers, white label ATM (WLA) operators, ATM networks, instant money transfer service providers and card payment networks besides the Clearing Corporation of India Limited (CCIL) and the

Table IX.1: Payment System Indicators – Annual Turnover

Item	Volume (million)			Value (₹ billion)		
	2013-14	2014-15	2015-16	2013-14	2014-15	2015-16
1	2	3	4	5	6	7
Systemically Important Financial Market infrastructures (SIFMIs)						
1. RTGS	81.1	92.8	98.3	734,252	754,032	824,578
Total Financial Markets Clearing (2+3+4)	2.6	3.0	3.1	621,570	672,456	721,094
2. CBLO	0.2	0.2	0.2	175,262	167,646	178,335
3. Government Securities Clearing	0.9	1.0	1.0	161,848	179,372	183,502
4. Forex Clearing	1.5	1.8	1.9	284,460	325,438	359,257
Total SIFMIs (1 to 4)	83.7	95.7	101.4	1,355,822	1,426,488	1,545,672
Retail Payments						
Total Paper Clearing (5+6+7)	1,257.3	1,195.8	1,096.4	93,316	85,439	81,861
5. CTS	591.4	964.9	958.4	44,691	66,770	69,889
6. MICR Clearing	440.1	22.4	0.0	30,943	1,850	0
7. Non-MICR Clearing	225.9	208.5	138.0	17,682	16,819	11,972
Total Retail Electronic Clearing (8+9+10+11+12)	1,108.3	1,687.4	3,141.6	47,856	65,366	91,408
8. ECS DR	192.9	226.0	224.8	1,268	1,740	1,652
9. ECS CR	152.5	115.3	39.0	2,492	2,019	1,059
10. NEFT	661.0	927.6	1,252.9	43,786	59,804	83,273
11. Immediate Payment Service (IMPS)	15.4	78.4	220.8	96	582	1,622
12. National Automated Clearing House (NACH)	86.5	340.2	1,404.1	215	1,221	3,802
Total Card Payments (13+14+15)	1,261.8	1,737.7	2,707.2	2,575	3,325	4,484
13. Credit Cards	509.1	615.1	785.7	1,540	1,899	2,407
14. Debit Cards	619.1	808.1	1,173.5	955	1,213	1,589
15. Prepaid Payment Instruments (PPIs)	133.6	314.5	748.0	81	212	488
Total Retail Payments (5 to 15)	3,627.4	4,620.9	6,945.2	143,748	154,129	177,752
Grand Total (1 to 15)	3,711.1	4,716.6	7,046.6	1,499,570	1,580,617	1,723,425

Note: 1. Real time gross settlement (RTGS) system includes customer and inter-bank transactions only.
2. Settlement of collateralised borrowing and lending obligation (CBLO), government securities clearing and forex transactions are through the Clearing Corporation of India Ltd. (CCIL).
3. Consequent to total cheque volume migrating to the cheque truncation system (CTS), there is no magnetic ink character recognition (MICR) cheque processing centre (CPC) location in the country as of now.
4. The figures for cards are for transactions at point of sale (POS) terminals only.
5. The National Automated Clearing House (NACH) system was started by the National Payments Corporation of India (NPCI) on December 29, 2012, to facilitate inter-bank, high volume, electronic transactions which are repetitive and periodic in nature.
6. ECS: Electronic clearing service; DR: Debit; CR: Credit; NEFT: National electronic funds transfer.
7. Figures in the columns might not add up to the total due to rounding off.

National Payments Corporation of India (NPCI). The number of entities authorised for operating PPIs increased to 42 with nine entities authorised during 2015-16. The number of entities authorised to operate WLAs at end-March 2016, stood at eight, out of which seven started the process of installation and operations; these collectively deployed 12,962 WLAs.

Agenda for 2015-16: Implementation Status

Payment and Settlement Systems in India, Vision 2018

IX.6 The Reserve Bank published the vision document for payment and settlement systems on June 23, 2016, laying down the roadmap for payment systems in the country up to December

2018 (Box IX.1). The broad contours of Vision 2018 revolve around 5 Cs: (i) **Coverage** – by enabling wider access to a variety of electronic payment

services, (ii) **Convenience** – by enhancing user experience through ease of use and of products and processes, (iii) **Confidence** – by promoting

Box IX.1
Payment and Settlement Systems in India: Vision 2018

Building best of class payment and settlement systems for a 'less-cash' India through responsive regulation, robust infrastructure, effective supervision and customer centricity

STRATEGIC INITIATIVES			
RESPONSIVE REGULATION	ROBUST INFRASTRUCTURE	EFFECTIVE SUPERVISION	CUSTOMER CENTRICITY
<p>1. Orienting policy with emerging developments and innovations</p> <ul style="list-style-type: none"> • Framing new policy: Policy framework for central counter-parties (CCPs); exit policy for authorised entities; framework for imposition of penalty; regulation of payment gateway service providers and payment aggregators; monitoring framework for new technologies. • Review of existing policies / guidelines: PPIs; mobile banking; WLA; nodal account for intermediaries. 	<p>1. Facilitating faster payment services</p> <ul style="list-style-type: none"> • NEFT – more frequent settlement cycles and exploring feasibility of adoption of International Organization for Standardization (ISO) messaging format. • Mobile banking – enhancing options for customer registration for mobile banking services; enabling wider access to mobile banking services in multiple languages for non-smartphone users. • Encourage innovative mobile based payment solutions. 	<p>1. Assessment of resilience of payment and settlement infrastructure including financial market infrastructures (FMIs) and System-Wide Important Payment Systems (SWIPS)</p> <ul style="list-style-type: none"> • Draft framework for testing resilience • Resilience of communication/ messaging infrastructure. • Resilience of IT systems of payment system operators (PSOs). • Building capability to process transactions of one system in another system. 	<p>1. Strengthening customer grievance redressal mechanism</p> <ul style="list-style-type: none"> • Frame necessary guidelines to ensure enhanced customer grievance redressal mechanism in authorised payment systems. • Require payment systems operators to adequately train front-office staff and agents.
<p>2. Setting up the Payments System Advisory Council (PSAC) of industry and government representatives / experts to strengthen the consultative process.</p>	<p>2. Improving accessibility</p> <ul style="list-style-type: none"> • Increasing acceptance infrastructure. • Implementation of the Bharat Bill Payment System. • Implementation of the Trade Receivables Discounting System. 	<p>2. Design an oversight framework</p> <ul style="list-style-type: none"> • On the basis of proportionality of risk posed by PSOs. • For large-value payment systems, retail payment systems (including IS audit), BBPS and TReDS. 	<p>2. Enhancing customer education and awareness</p> <ul style="list-style-type: none"> • Electronic Banking Awareness and Training (e-BAAT). • Framework requiring PSOs to disclose fees and terms and conditions of their service.

(Contd...)

**PAYMENT AND SETTLEMENT SYSTEMS
AND INFORMATION TECHNOLOGY**

<p>3. Amendments to the PSS Act</p> <ul style="list-style-type: none"> • Improved governance of PSO. • Resolution of CCP/ FMI. • Non-Registration of charge on collateral with CCPs. 	<p>3. Promoting interoperability</p> <ul style="list-style-type: none"> • Unified payment interface. • Toll collection. • Payments for mass transit systems. 	<p>3. Strengthening the reporting framework including fraud monitoring</p> <ul style="list-style-type: none"> • Move the reporting of periodic returns by payment systems operators to the XBRL platform. • Draw a framework for collection of data on frauds in payment systems. 	<p>3. Protection of customer interest</p> <ul style="list-style-type: none"> • Encourage PSOs to develop robust fraud and risk monitoring systems. • Endeavour to build a framework to limit customer liability for unauthorised electronic transactions.
<p>4. Strengthen financial stability</p> <ul style="list-style-type: none"> • Encouraging adoption of Legal Entity Identifier by financial entities. • Settlement of funds leg of financial transactions in central bank money. 	<p>4. Enhancing safety and security</p> <ul style="list-style-type: none"> • Migration to EMV chip and PIN cards. • EMV card processing at ATM based on chip data. • Security of ATM transactions by holistically strengthening the safety and security of ATM infrastructure. • Examining feasibility of Aadhaar-based authentication. 	<p>4. Analysing data and publishing reports</p> <ul style="list-style-type: none"> • Oversight report on select retail and large value systems. • Analysis of payment system related data within the Reserve Bank. 	<p>4. Positive confirmation</p> <ul style="list-style-type: none"> • Incorporate the feature of sending positive confirmation of payment to the remitter in RTGS system. • Strengthen positive confirmation feature of NEFT.
	<p>5. Cheque clearing systems</p> <ul style="list-style-type: none"> • Endeavour to eliminate paper-to-follow arrangements for all cheques issued by state governments. • Promoting use of positive pay mechanism, national archive on cheque images. • Encouraging complete migration of cheques to CTS-2010 standards. 		<p>5. Conducting customer surveys</p> <ul style="list-style-type: none"> • Engage with various stakeholders/ professionals to conduct user/ customer surveys on specific aspects of payment systems.

integrity of systems, security of operations and customer protection, (iv) **Convergence** – by ensuring interoperability across service providers and (v) **Cost** – by making services cost effective for users as well as service providers. In pursuit of a ‘less-cash’ society, Vision 2018 is expected to result in: (i) continued reduction in the share of paper-based clearing instruments, (ii) consistent growth in individual segments of retail electronic payment systems viz., NEFT, IMPS, card transactions and mobile banking, (iii) increase in the registered customer base for mobile banking, (iv) significant growth in acceptance infrastructure and (v) accelerated use of Aadhaar in payment systems.

IX.7 The activities undertaken during the year, including those which were indicated in the agenda for 2015-16, can be broadly classified into actions which have an impact on regulation, infrastructure and supervision of payment systems, and were oriented towards customer interest.

Responsive Regulation

Card Acceptance Infrastructure

IX.8 In line with the fourth bi-monthly Monetary Policy Statement, 2015-16, a concept paper was prepared on ‘Card Acceptance Infrastructure’. The paper outlined a multi-pronged strategy to enhance the growth in acceptance infrastructure and usage of cards including rationalisation of merchant discount rates (MDR) for debit card transactions. The paper was placed on the Reserve Bank’s website in early March 2016 to garner comments/feedback.

Payment Gateways and Aggregators

IX.9 Payment gateways and aggregators undertaking bill payments are being covered under the scope of Bharat Bill Payment System (BBPS) and hence, are required to apply for authorisation to the Reserve Bank to remain

in the business. With regard to other payment aggregators and gateways which do not undertake bill payments, the feasibility/desirability of formulating a regulatory framework will be examined after complete operationalisation of the BBPS.

Introduction of PPI-MTS

IX.10 A new category of semi-closed PPI upto ₹2,000 was introduced for mass transit systems (PPI-MTS) to facilitate small value electronic payments.

Exit Policy for Authorised Entities

IX.11 To ensure consumer interest and that other stakeholders are protected, an exit policy specifying the parameters and processes for voluntary exit of a payment system operator (PSO) authorised to operate as a retail payment system, (namely PPI Issuers and Money Transfer Service Scheme (MTSS)-Overseas Principal) has been put in place.

Payment System Innovation Awards

IX.12 To encourage innovations in payment and settlement systems, the Reserve Bank announced the ‘Payment System Innovation Awards’ in December 2015. The contest was organised by the Institute for Development and Research in Banking Technology (IDRBT), a wholly owned subsidiary of the Reserve Bank.

Robust Infrastructure

Authorisation of TReDS and BBPS

IX.13 The Trade Receivables Discounting System (TReDS) is an institutional mechanism to facilitate the financing of trade receivables of micro, small and medium enterprises (MSMEs) from corporate buyers through multiple financiers. In-principle approval has been given to three entities to set up and operate TReDS under the Payment and Settlement System (PSS) Act, 2007. BBPS is a pan-India interoperable bill payment system.

In-principle authorisation was issued to NPCI to function as a Bharat Bill Payment Central Unit (BBPCU). Applications/requests received from non-banks and banks for authorisation/approval to operate as Bharat Bill Payment Operating Units (BBPOUs) under the BBPS are under process.

Financial Messaging Services

IX.14 The Reserve Bank granted approval to the SWIFT India Domestic Services Private Limited (SIDSPL) to provide messaging services for domestic financial transactions. Currently, messaging for inter-bank transactions is transmitted through the Structured Financial Messaging System (SFMS). Messaging operations of SWIFT will strengthen the infrastructure for financial transactions in the country.

Security of Card Transactions

IX.15 As part of risk mitigation measures for card transactions, banks were advised to progressively migrate all active cards to EMV chip and PIN cards by December 31, 2018. Further, banks and WLA operators have been advised to ensure that all the ATM infrastructure, both existing and new, installed/operated by them are enabled for processing of EMV chip and PIN cards by September 30, 2017.

Mobile Banking

IX.16 In order to encourage mobile banking, the Reserve Bank facilitated customers' registration for mobile banking at ATMs connected to the National Financial Switch (NFS). Thus, a bank customer can register for mobile banking at any ATM obviating the need to visit the bank branch.

Financial Market Infrastructure – CCIL

IX.17 In pursuance of the G20/FSB declarations and in line with the 'Recommendations of the Implementation Group on OTC Derivative Market Reforms', CCIL was authorised to put in place central counter-party (CCP) clearing for rupee

interest rate swaps (IRS). CCIL has launched Anonymous System for Trading in Rupee OTC Interest-rate Derivatives (ASTROID) in August 2015.

Effective Supervision

Assessment of Real Time Gross Settlement (RTGS) against Financial Market Infrastructure (FMI) Principles

IX.18 The Committee of Payments and Market Infrastructures (CPMI) published the 'Application of the Principles for Financial Market Infrastructures to the Central Bank's FMIs'. The policy framework for regulation and supervision of FMIs published by the Reserve Bank had identified RTGS as one of the FMIs. The assessment of RTGS against the Principles for FMIs (PFMIs) has been initiated.

Oversight of Payment Systems – CCIL

IX.19 As a Qualified Central Counterparty (QCCP), CCIL is assessed on an on-going basis against PFMIs. Accordingly, an assessment of CCIL was carried out during the year. CCIL, as per the 'Disclosure Framework and Assessment Methodology', prescribed in the PFMIs, disclosed its self-assessment on its compliance with PFMIs as a measure of enhanced transparency. CCIL has also started disclosing as per the public disclosure standards for CCPs. Besides, CCIL has introduced a process for computing intra-day MTM margin on multiple occasions in all segments.

Oversight of Payment Systems – Retail

IX.20 In addition to onsite inspection of 23 PPIs, self-assessment as per the assessment template for retail payment systems were received and reviewed for another 29 entities operating retail payment systems.

Assessment against Implementation of PFMIs

IX.21 CPMI and the International Organisation of Securities Commissions (IOSCO), monitoring the implementation of PFMIs including both Principles

and Responsibilities, rated India as '4'¹ for Level 1². Level 2/3³ assessments are peer reviews of the extent to which the content of the jurisdiction's implementation measures is complete and consistent with the PFMI for Responsibilities and India has been rated as 'Observed'⁴ in the Level 2/3 assessments for Responsibilities.

Customer Centricity

Cash Withdrawal at Point of Sale (POS)

IX.22 The limit for withdrawal of cash at POS through debit cards and open system prepaid cards issued by banks was enhanced from ₹1,000 to ₹2,000 per day for Tier III to VI centres, with customer charges, if levied, not to exceed 1 per cent of the transaction amount for all centres.

RTGS Service Charges

IX.23 The recent enhancement of RTGS has enabled expansion in the time window and improved operational efficiency. To ensure that services were appropriately priced for banks, the charges for RTGS were rationalised. However, the maximum fee a member could charge from its customers remained unchanged.

Agenda for 2016-17

IX.24 Based on the agenda set out in Vision 2018, the following activities are planned for 2016-17.

Framework for Imposition of Penalty

IX.25 Guidelines and standards for various payment and settlement systems are issued under the provisions of PSS Act. Non-adherence to these by participants and operators can attract penal provisions under the PSS Act. A framework for imposition of such penalties under the PSS Act would be put in place.

Review of PPI Guidelines

IX.26 The PPI segment of the payment systems has been growing both in terms of number of authorised operators and its usage. Taking into account the advancements in technology, safety and security concerns of PPI transactions, know your customer (KYC) related issues, entry of new players, and new payment mechanisms as well as channels, it is considered necessary to undertake a holistic review of the PPI guidelines.

Review of WLA Guidelines

IX.27 These guidelines, which were set out with the objective of ensuring expansion of ATM infrastructure in rural and semi-urban areas, have not resulted in the anticipated growth in ATM infrastructure. Accordingly, the WLA guidelines will be examined holistically and targets re-aligned to meet the current requirements.

¹ Rating 1: Draft implementation measures not published; Rating 2: Draft implementation measures published; Rating 3: Final implementation measures published; Rating 4: Final implementation measures fully in force; Rating NA: No implementation measures needed (that is, not applicable).

² To assess whether jurisdictions have completed the process of adopting the legislation, regulations and other policies that will enable them to implement the Principles and Responsibilities.

³ Level 2 to assess whether the content of legislation, regulations and policies is complete and consistent with the Principles and Responsibilities. Level 3 to assess whether there is consistency in the outcomes of implementation of the Principles and Responsibilities.

⁴ Observed: The authorities fulfil the responsibility; Broadly Observed: The authorities are broadly fulfilling the responsibility; Partly Observed: The authorities partly fulfil the responsibility; Not Observed: The authorities are not fulfilling the responsibility; Not Applicable: This responsibility does not pertain because of the particular institutional framework or other conditions faced by the authorities with respect to this responsibility.

Constitution of PSAC

IX.28 A Payment System Advisory Council (PSAC) with representation from the fields of technology, telecommunication, Fin Tech, security solutions, academia, *etc.*, will be constituted to assist BPSS in forming new policies and assessing the impact of new technological developments for approving new products and solutions by providing necessary insights.

Adoption of Legal Entity Identifier (LEI)

IX.29 The LEI uniquely identifies parties to a financial transactions globally. Need for such identification was felt in the aftermath of the last financial crisis. Use of LEI will facilitate monitoring the exposure of entities across systems. The Reserve Bank will put in place a framework to encourage the adoption of LEI for certain transactions/markets/categories of institutions.

Policy Framework for CCPs

IX.30 The CCPs are critical FMIs and their efficient functioning is important. The Reserve Bank has already declared the policy framework for regulation and supervision of FMIs under its regulatory jurisdiction. The PFMI against which FMIs are assessed lay emphasis on having effective governance framework and management of various risks, including legal, credit and liquidity risks. To begin with, the Reserve Bank will come out with directions on governance of domestic CCPs and their capital/net worth requirement, and recognition of foreign CCPs. At a later date, the Reserve Bank may come out with directions on risk management, if required.

Operationalisation of BBPS and TReDS

IX.31 The BBPS will be made operational during 2016-17. The Reserve Bank will pursue with

other authorities/government for the speedier implementation of TReDS.

Promotion of Card Usage

IX.32 The Reserve Bank, after taking into account the feedback received on the concept paper on 'Card Acceptance Infrastructure', and the findings of the pilot project being undertaken, will initiate a review of the extant policy on MDR to encourage wider adoption of card payments in the country. The review will also be complemented with a separate policy on enhancing card acceptance infrastructure in the country.

Electronification of Toll Collection

IX.33 Toll payments, largely done in the form of cash payments, is another segment where efforts to migrate to electronic payments have been sporadic and isolated. Electronification of the toll collection systems on a pan-India basis in an interoperable environment will be encouraged and steps would be initiated to achieve this vision.

Customer Education and Awareness

IX.34 The Reserve Bank, in collaboration with the stakeholders, would endeavour to enhance customer awareness through structured campaign and Electronic Banking Awareness and Training (e-BAAT) programme.

Customer Survey

IX.35 The Reserve Bank will engage with various stakeholders/ professionals to conduct user/customer surveys over a period of time on specific aspects of payments systems. The findings of such surveys will not only provide insights into the use of existing payment products and processes by customers for meeting their various payment needs but also generate ideas for reviewing policies.

DEPARTMENT OF INFORMATION TECHNOLOGY (DIT)

IX.36 Apart from policy formulation on information technology (IT) related aspects for the Reserve Bank, DIT continued to focus on managing and operating the Reserve Bank's critical IT systems including large value payment and settlement systems. A subsidiary was formed during the year, details of which are given in Box IX.2.

Agenda for 2015-16: Implementation Status

Extension of e-Receipts and e-Payments

IX.37 The Reserve Bank, being the banker to central and state governments, has been striving for an efficient, secure and straight-through-processing (STP) based system for government receipts and payments. During the year, five state governments were on-boarded for processing their electronic payments. The reporting of government receipts by agency banks to the Reserve Bank wherein multiple state governments are participants, was also achieved during 2015-16.

Support for Goods and Services Tax (GST)

IX.38 The process flow for the proposed GST was designed on the basis of the 'Standardised e-Receipt model of e-Kuber', with the Reserve Bank playing the crucial role of an 'aggregator'

and a one-stop source for data reporting to the GST Network (GSTN). The Reserve Bank, in coordination with GSTN has been working to ensure that banks are well prepared for the GST rollout.

Sovereign Gold Bonds (SGBs) and Priority Sector Lending Certificates (PSLCs)

IX.39 In an effort to dissuade customers from buying physical gold, the SGB scheme was launched in November 2015. e-Kuber acted as the base system for processing applications under the scheme; it also acted as a registrar and depository for the issues. Distributing agents, that is, banks and post offices, were provided an online medium of transfer of information for their customers through e-Kuber. A system for facilitating transfer of PSLCs across banks was put in place and made operational from April 04, 2016.

Information Security Operations Centre (iSOC)

IX.40 Given the increased information security related threats, the Reserve Bank has embarked on setting up an iSOC. The iSOC project will enable centralised real-time supervision, early detection and response to security threats, proactive tracking and mitigation of enterprise-wide attacks in coordination with external agencies such as

Box IX.2

Reserve Bank Information Technology Private Limited (ReBIT)

The process of operationalising the information technology (IT) subsidiary of the Reserve Bank is nearing completion. The CEO for the subsidiary has been appointed and selection of the vertical heads is underway. ReBIT, incorporated on July 4, 2016, will focus on the IT systems and cyber security (including related research) of the financial sector and assist in the audit and assessment of the entities regulated by the Reserve Bank. The mandate of the ReBIT also includes advising, implementing and managing the IT projects or systems of the Reserve Bank.

As a think-tank for innovation and big data analytics, it

is also expected to generate new ideas on IT solutions for the financial sector and participate in deliberations of IT standard setting bodies to achieve robust and interoperable standards for the Indian financial sector. ReBIT will have advisory committees to provide guidance on cyber security, current and futuristic requirements of the financial sector, particularly banks as also to the Reserve Bank on its IT systems and projects. The subsidiary will report periodically to the Reserve Bank's apex level committees including the Board for Financial Supervision, Board for Payment and Settlement Systems and the IT Sub-committee of the Board.

the Indian Computer Emergency Response Team (CERT-In). The iSOC is expected to be operational by the end of December 2016.

Upgradation of NEFT and RTGS, and Virtualisation of IT infrastructure

IX.41 Systemically important and other payment system applications, RTGS and NEFT systems, hosted in the Reserve Bank's data centres were upgraded substantially to take care of increasing volumes during the year, and all time daily high volume of more than 10 million NEFT transactions was processed smoothly.

IX.42 To overcome challenges in terms of cooling, power, space, agility and obsolescence of IT infrastructure, a project for IT infrastructure up-gradation was initiated using virtualisation technology. The project, which also envisages replacement of the aging network and security infrastructure with contemporary state-of-the-art systems is expected to be completed by January 2017.

Mail Messaging Solution (MMS)

IX.43 For improved security and ease of usage, the MMS was upgraded to work on the

MS Exchange 2013 platform with new features including the enterprise vault (EV) and email archiving systems.

Agenda for 2016-17

Electronic Document Management System (EDMS)

IX.44 EDMS is being introduced in the Reserve Bank for instituting a less paper-based system. This will entail some changes in the work processes and digitising of physical records. Vendor selection for all the offices of the Reserve Bank has been completed for the project with the aim to roll it out by July 2017.

e-Kuber for Currency Management and Government Transactions

IX.45 e-Kuber will be extended to cover the currency management function of the Reserve Bank. This will facilitate holistic and integrated accounting of the cash management function within a single centralised system. Vigorous efforts will be made to on-board more state governments and central government departments in the standardised e-receipt and e-payment model of e-Kuber.