Overview of ATM Payment systems and Audit functions

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ATM Machines:

- **Physical and environment control**
  - Site preparation (LAN/WAN connectivity, Electricity, UPS power etc).
  - ATM interface with the Banks / vendors (Facility Service provider) switch (FIS/FSS/ Euronet/Opus etc)
  - Environment control (Air conditioners, lighting etc).
  - Security (Cameras-CCTV, Alarm, access control, Guard etc)
  - Others (Power Gen set, Fire extinguishers etc)
  - Agreements with landlord, rentals / deposits, licenses etc
Types of ATMs

- Two types of ATMs:
  - ATMs, Cash Dispensor
- Cash loading - Front / back side, Printer etc
- Transaction movement from ATM/ATM switch / CBS
- Main ATM vendors: Diebold, NCR, Wincor Nixdorf (AGS infotech), Triton (Cashtech), Nautilas (Hyosong Nautilus) etc
  - Certification of the ATM machines
  - EMV standard
  - Bi-lingual, Biometric, Baille system etc.
  - Solar Power driven ATMs
ATM functions

- Functions available in ATMs:
  - Cash withdrawal/ Cash deposits / mini statement/ balance enquiry/ transfer of Funds between connected accounts.
  - Multiple ( added values ) functions in ATMs, Mobile recharging Ticket booking (Railways etc), Bill payments incl. utility Bills ( electricity, telephone, Mobile, Credit card payments etc
  - Off line/On line/ sites
  - Routing of transactions from ATM.
In sourced/ Outsourced models of ATMs

- What is outsourcing? In-sourcing?
- Total activities setting up an ATM:
  - Site identifications/preparation/site rentals, deposits/ Installation of ATMs/ ATM Switch activities/Security arrangements/ Network/ Interface/cash replenishments/ reconciliation/ Debit card creations/Pin mailers/Ready kit /MIS/ settlement/Help desk/Reconciliation of transaction entries/ATM consumables/ UPS/Air Conditioning/ Guard /Security camera/Name Board etc.
- What are the functions which are out-sourced?
- Precautions to be taken in outsourcing different activities from audit point. (SLA)
ATM operations

- Cash Replenishments and other related functions.
  - Sorting of Usable notes, Insurance, Cash balancing etc
- What is hot listing? MIS/ Reports / Data extraction.
- What is card swallowing? And what to do and what are the measures?
- Complaint management, types of general complaints
- Reasons for rejections / short delivery in ATMs?
- Error codes in the ATM slip
ATM Switch

- ATM switch is generally kept in a DC. DR may be at another place. DR drill is important.
- Major switching applications providers:
  - IST, Base24, Euronet, Narda, Opus, S1
- Network – LL/ISDN/Wireless/MPLS etc, Redundancy.
- Environment – AC, UPS, Fire extinguisher
- Physical-Access control,
- Logical-HSM/ routing of transactions.
- Incident management.
Audit of ATM process/security systems

• RBI defines the standards from time to time. (manner of transfer of funds/criteria for membership etc)
• System provider once obtained the certification of approval cannot change the approved payment process without consulting RBI.
• RBI has the power to call any returns/documents/information from the participants.
• RBI has the power to access any information.
• Power to enter the premises of the participants and inspect.
• Confidentiality of information with the system provider.
Contd

• RBI has the power to conduct or get conducted the audit of system providers/participants and to point out the discrepancies.

• Audit of the functioning of the participants can be done by RBI once a year either themselves or through authorized third party auditors.

• Audit includes the processes (Technical, business and information security aspects).

• Necessary directives are issued to the participants for taking remedial action./initiate suitable steps to rectify the audit remarks.

• Compliance on the audit remarks.
Applicability of Act to ATM vendors

- Any service provider interested /already undertaking the payment settlement functions need to obtain the RBI approval.
- RBI calls for explanation if necessary and gives certificate of authorization under certain terms and conditions.
- Many clauses are mentioned along with the certifications which is to be adhered to.
- If the activities are carried out through an ASP the service providers activity is also audited (ATM groups).
Audit of approved participants

- RBI gives the list of approved payment system operators in their website in categories such as:
  - **Central counter party** - CCIL, (security, CBLO, forex segment etc)
  - **Cards payment networks** - like American express, Diners, Master card, Visa worldwide for affiliation credit cards, debit cards, prepaid cards etc
  - **Cross border Money transfer** - inbound only. Western Union, Moneygram, Bahrain finance co, UAE exchange centre etc etc (10 companies)
  - **ATM networks** - like NPCI- NFS, Bank of India – Cashtree/BANCS ATM groups, Federal bank-sharing of ATMs, Euronet services - Cashnet ATM group, PNB- Bilateral with Everest Nepal, SBI- SBI group ATM network, Agency clearing for SBI group, Group payment systesm, SVC bank-Cache24 ATM sharing arrangement.
  - **Prepaid payment instruments** - Airtel M commerce- Stored value card wallet, ATOM Technologies-Prepaid instruments, Edenred (Accor services) Meal vouchers and coupons, ITZ cash card, Muthoot vehicle and Asset finance ltd, Nokia Mobile- Nokia Money, Paymate India-Gift mate, Sodexo SVC India pvt ltd- Meal and gift vouchers, UAE exchange & financial services ltd- Silver and Gold card, Zip card services- Zip cash coupons (17 companies)

( Details taken from RBI site)
Audit functions

- ATM switching /Network.
  - ATM switching transactions/ networking done by the ASP vendor/bank.
  - Process and operation documentation
  - Network diagram
  - switch reports.
  - Down time reports for the switch(Planned/unplanned
  - Fire drill, biometric access to DC/DR, Environment( temperature, humidity, fire extinguisher etc), monitoring
  - Process/procedure followed for test environment and production environment till the completion of life cycle
  - Changes in the production /process set up
Audit functions contd

Settlement of transactions/ Claims / Dispute management

- RBI guidelines on various aspects like settlement of claims, process documentation, MIS reports etc

Other details:

- List of authorized persons to the switch with rights (switch, server, application administration.
- submission of monthly reports to RBI.
- Agreements between the member banks and the agreement between the banks /ASP.
Fraud prone areas.

- How the ATM card is generated? who does it?
- What is a pin mailer? Preparation/mailing
- Issue and Activation of cards
- How to handle Debit card and the pin mailer?
- What is a ready kit? How it helps in avoiding frauds?
- What is a EJ?
- How the settlement takes place?
ATM security threats

- **Recent developments:**
  - Skimming the magnetic strips remains the dominant threat, gas/explosion/malware.
  - Logical threats – Participation of Insider involvement (employee/past employee)
  - EMV standards/biometric access/seismic detectors for checking the vibrations etc.
  - White listing in the switch/ATM, instead of back listing. (Allow what we want than, allowing only the known threats)
  - Access control list (ACL) gives an exhaustive definition of processes system resources, permitted in the system.
Physical attack:
- Attack on ATM infrastructure (can be avoided by anti-skimming devices/security camera/closure of access doors etc.

Technology attack:
- Stealing credit card details, take control of ATMs through malware etc.

Criminals are preferring physical attack on the ATMs rather than on malware now a days.

Insider attack generally through dormant accounts.
Any Questions?

Thank you

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