A TECHNICAL REPORT

ON

STUDENT INDUSTRIAL WORK EXPERIMENCE SCHEME [SIWES]

HELD AT

ABDULAZEEZ OLAITAN BUSINESS ENTERPRISES ILORIN KWARA STATE

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DEDICATION

This Technical report is dedicated to Almighty God for sparing my lives throughout this programme. Also to my Parents Mr. & Mrs. **BADMUS**

ACKNOWLEDGEMENT

I give thanks to Almighty God for given me the grace and opportunity to participate in this SIWES programme. May his name be praise forever

I want to specially appreciate the effort of my parent **Mr. & Mrs. Badmus** for their financial support and their moral support, they will live to eat the fruit of their labour.

I also acknowledge my amiable and capable SIWES coordinator, I will be an ingrate if I fail to mention my SIWES Supervisor and my Lecturer in Business Administration Department for their tremendous effort in my life and the knowledge they have impacted to me

My gratitude goes to Industrial base supervisor **Mr. Abdulazeez Y.O** for the impartation of knowledge given to me.

My profound gratitude goes to my brother and sister for their support during this program.

May Almighty God bless every one of you (AMEN)

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CHAPTER ONE

1.2 INTRODUCTION TO SIWES

In the early stages of Banking and Finance, Nigerian Student were graduating from their respective Institutions without any technical knowledge or working experience. According to Akereloja (2008), acquisition of practical skills is an antidote of meaningful development in any society. In accordance with Akereloja's view, Odiagha (1995) also posits that practical knowledge is learning without which mastery of an area of knowledge may be too difficult to achieve and that practical knowledge involves developing skills through the use of tools or equipment to perform tasks that are related to a field of study.

As a result, the Federal Government of Nigeria introduced the Student Industrial Work Experience Scheme (SIWES) programme in Tertiary Institutions in 1975 to ensure acquisition of field practical knowledge and skills by Students before graduation, and to further expose Students to Industry based skills that are necessary for smooth transition from classroom to the labour world, providing the students with the basic prospects to be part of real work situations outside the lecture room.

1.2 DEFINITION OF SIWES

The student industrial working experience scheme is a Program that constitutes immensely to building of technical skills available to the Nigeria economy, which are needed for the national industrial development.

1.3 HISTORICAL BACKGROUND OF SIWES

The Student Industrial Work Experience Scheme (SIWES) was established in 1973 by the Industrial Training Fund (ITF). Prior to the establishment of the Scheme, there was a growing concern among our Industrialists that graduants of our institutions of higher learning lacked adequate practical background studies preparatory for employment in industries. It is against this rationale for initiating and designing the scheme was hinged.

Consequently the scheme affords students the opportunity of familiarizing and exposing themselves to the needed experience in handling equipments and machinery that are usually not available in their institutions so as to smoothen their entry into industrial practices on completion of their studies and also reduces period spent in training fresh graduates as new employees.

1.4 AIMS AND OBJECTIVES OF SIWES

SIWES is strategized for skills acquisition, therefore, the key aim is to bridge the gap between theory and practice by exposing students to the industrial environment and enable them to develop

occupational competences so that they can readily contribute their quota to national economic development and technological advancement after graduation.

The Specific Objectives of the Scheme as outlined in the Industrial Training Funds Policy document no.1 of 1993 are as follows:

- To provide placements in industries for students of higher institutions of learning approved by relevant authorities (NUC, NBTE, NCCE) to acquire experience and skills relevant to their course of study.
- Prepare Students for the real work situations they will meet after graduation.
  Expose Students to work methods and techniques in handling of equipment and machinery that may not be available in school. Makes transition from School to the labour World smooth and enhance Student contact for later job placement.
- Provides Students with the opportunity to apply their knowledge in real life work situation thereby bridging the gap between theory and practice.

1.5 REASONS FOR TRAINING

Reason for the industrial training are as follows:

1. The knowledge acquired in the classrooms are not enough due to lack of practical
2. The program has also helped to distinguish between class and practical work
3. Class room theories cannot be compare with the practical work done on the field.
4. The Siwes program has proved a means of opportunity for students to handle some sophisticated equipment not found in the school

1.6 THE MAJOR DOCUMENT OF ITF

1. PLACEMENT LETTER: This is the formal letter of the placement to be submitted to any employer by each students

2. THE JOB REPORTING FORM: This form is to be completed by students before he/she settle down with the employer. The information on the form will assist the central and department during supervision visits. Failure to return this form is taken as non participant in the program.

3. THE TRAINING LOG BOOK: This has to be completely filled daily and signed weekly by industrial based supervisor, and this logbook carried detailed information about work carried out daily, the logbook must be with you daily.

CHAPTER TWO

2.1 A BRIEF HISTORY OF THE COMPANY

The Abdulazeez Olaitan Business Enterprises is responsible for developing the business sector of the Nigerian business, with a view to growing the business, driving income growth, accelerate money and food security, generating employment and transforming Nigeria into a leading global business market, through the commodity value chain concept of the business development.

The idea is to treat money as a business and not as a development program, concentrate on develop where Nigeria has comparative advantage and develop strategic partnerships to stimulate investment in the country. The Marketing promotes business, encourages business development, supports private sector institutions and broadens stakeholders' partnership to facilitate buy materials for market based industries, diversify market along commodity value chains and generate foreign exchange earnings for the country.

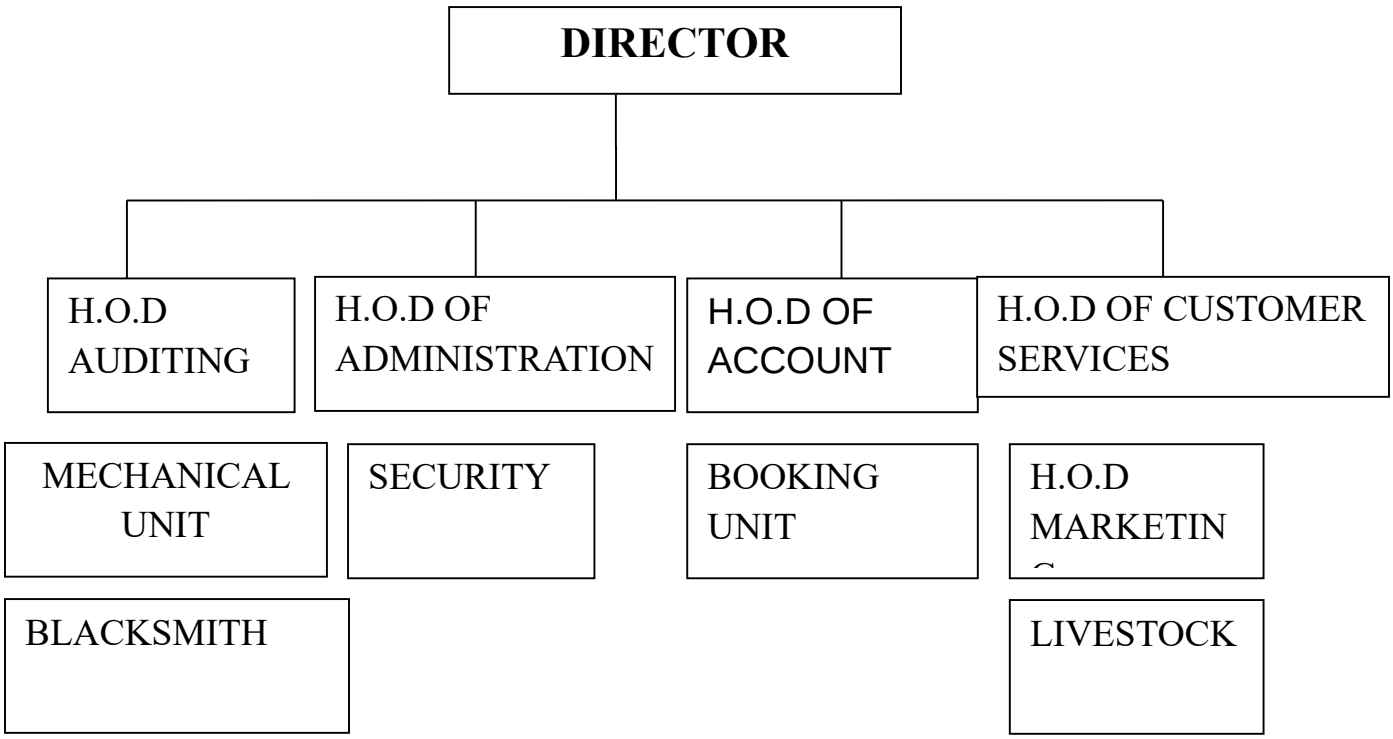
The Abdulazeez Olaitan Business Enterprises is a business man of the Nigerian government that regulates business research, marketing, develop and veterinary research all over Nigeria. Established in 1999, the abdulazeez Olaitan has the responsibility of optimizing market and integrating rural development for the transformation of the Nigerian economy, with a view to attaining money, food and security positioning Nigeria as a net money and food exporter for marketing of their business development. Primarily funded by the Federal Government, the Abdulazeez Olaitan Business Enterprises currently superintends almost fifty parastatals operating as either key departments or agencies across the country.

The Abdulazeez Olaitan Business Enterprises has two major departments:

- **Technical Departments:** business (marketing and banking), Market, Livestock, Land Resources, Fertilizer, Food Reserve & Storage and Rural Development.
- **Service Departments:** Finance, Human Resources, Procurement, PPAS (Plan, Policy, Analysis & Statistics) and Co-operatives. Share4dev

The Abdulazeez Olaitan Business Enterprises workforce is 5,133 staff as at March 2021, comprising of the 1,709 Staff at Headquarters staff and staff 3,424 in the States. In all, establishment has 396 Staff at Directorate level consisting of 25 Directors, 119 Deputy Directors and 252 Assistant Directors.

2.2 ORGANOGRAM OF THE COMPANY



CHAPTER THREE

3.1 INTRODUCTION

BANK

A bank is a financial institution that accepts deposits from the public and creates a demand deposit while simultaneously making loans. Lending activities can be directly performed by the bank or indirectly through capital markets.

Whereas banks play an important role in financial stability and the economy of a country, most jurisdictions exercise a high degree of regulation over banks. Most countries have institutionalized a system known as fractional-reserve banking, under which banks hold liquid assets equal to only a portion of their current liabilities.

In addition to other regulations intended to ensure liquidity, banks are generally subject to minimum capital requirements based on an international set of capital standards, the Basel Accords.

Banking in its modern sense evolved in the fourteenth century in the prosperous cities of Renaissance Italy but, in many ways, functioned as a continuation of ideas and concepts of credit and lending that had their roots in the ancient world. In the history of banking, a number of banking dynasties – notably, the Medicis, the Pazzi, the Fuggers, the Welsers, the Berenbergs, and the Rothschilds – have played a central role over many centuries. The oldest existing retail bank is Banca Monte dei Paschi di Siena (founded in 1472), while the oldest existing merchant bank is Berenberg Bank (founded in 1590)

3.2 TYPES OF BANKS AND THEIR FEATURES

Credit Unions: A credit union is an institution that is non-profitable but gives the same basic benefits to its members.

Investment banks: An investment bank serves lots of large corporations, firms and buys shares to resell to investors, and even governments.

Commercial banks: Commercial banks are the financial organizations that receive deposits, provide security to the account, and give loans.

Retail banks: A retail bank is a bank that only lends help to small businesses and companies and consumers.

Savings and Loan Associations: The savings and loan and associations are an institution that mainly helps individuals with their residential mortgages or properties.

Community development banks: The purpose of community development banks is to provide help to individuals that live in low socioeconomic places.

Online and Neobanks: Online and neobanks are online banks without physical branches. The bank is popular because anything can be done online, and it is convenient and hassle-free.

1.Credit Unions

Credit unions are a non-profit institution that is operated and owned by individuals who pool their money to run the credit union. It offers the same services as a normal bank, but credit unions offer their services at a lower interest rate. To acquire the benefits of credit unions, a person needs a membership. Shareholders will pool their money to help their members get a loan and obtain other services. The remaining money is then invested to earn interest. Credit unions provide high savings rates, lower interest rates on borrowing, and lower fees. These are good benefits that a member can get because the institution is not profiting on their savings, but still offers them a lower interest rate for any type of loans. However, credit unions have risks such as credit risk, interest risk, liquidity risk, and strategic risk. An example of these risks is credit risk, which means that it would be bad for the institution if one member stops paying what they owe, and it will greatly affect the assets of the institution. Nevertheless, many people are willing to take the risks because of the benefits they can get as long as they follow the rules of the institution.

2. Investment Banks

Investment banks focus primarily on big corporations, governments, and firms to provide them with the complicated financial assistance that will help their client business grow. They also act as a bridge that is linked between the stockholder and the company. Investment banks do not take deposits of money because their main goal is to trade and sell the shares of a corporation to an investor. Investment banks find a possible investor to buy shares of the company. Their benefits also include finance and asset management, researching data about companies that will likely buy a share, and trading and sales of the shares for their clients. Despite its benefits, it also has a lot of risks to think about. An example of a main risk in investment banks is their market and liquidity risk. Market risk would mean a client might experience losses because of the changes in prices at the market. While liquidity risk stands for clients not being able to sell their shares at a reasonable price or even not selling the share at all. Regardless of these risks, investment banks still provide their clients with services that are beneficial to them, and it can outweigh the risks.

3. Commercial Banks

Commercial banks are financial institutions where individuals and businesses can do their banking. A commercial type of institution accepts deposits, opening, and checking of accounts, as well as getting financial assistance through loans. Commercial banks operate by profiting from their clients, from service fees, monthly service payments of clients, loans, and fees from safe deposit boxes. Through commercial banks, individuals can safely store and track their money, loans that can greatly help businesses; online banking transactions, can use automated machines using debit cards provided by a specific bank. These banks are also accessible to anyone as they have a lot of branches. However, clients still may face various risks in using a commercial bank. Some of these risks include credit risk, operational risks, and liquidity risks. Despite the risks, banks have their own risk management that will lessen the probability of the risks.

4. Retail Banks

Retail banks operate the same way as traditional banks, but only offer their services to public individuals. A retail bank provides basic bank services to individuals that wish to manage their money. Some of their service products also include term and fixed deposits, and foreign currency accounts. Retail banks also offer their customers debit cards, and credit cards to build credit scores that will allow a person to access better borrowing terms. Customers can also apply for different loans. The main risk of using a retail bank is credit risk, since it offers lots of loans that can lead to excessive debt. Operational risks can also happen to either employees or customers. What a retail bank can provide is the main reason a person uses its services.

5. Savings and Loan Associations

A savings and loans association is a financial institution that provides the necessary financial aid to the people. Their primary focus is on helping the customers to get mortgage loans to purchase a property. It also accepts deposits for savings accounts, and the organization will use it as an investment in what they lend to the responsible borrowers. Although their main focus is on mortgages and loans, savings and loan associations also give basic bank services. It has debit and credit cards that will help their customers increase their eligibility for loans. The risks that are associated with savings and loan associations are interest rates on loans, credit risks, and operational fraud. People use the organization so that they can get gain the funds needed to purchase a property.

6. Community Development Banks

Community development banks are institutions that are operated by the private sector. The community development bank type of bank operates differently than any other bank because community development banks do not take money deposits from clients. They offer assistance for personal and business reasons, but their main objective is to lend help with lower interest rates to low-level socioeconomic places across a given area. It gives the less fortunate places to improve and catch up with other thriving places. They don't focus on making a profit, but want everyone to thrive in a community. The risks of a community development bank are that it is prone to corruption from its employees. Community development institutions are a great help that did not focus on one individual, but on the betterment of everyone.

7. Online and Neobanks

Online banking and neobanks are both banks that can be accessed online, but online banking is an action of a customer to access their accounts online without going to the bank's physical branch. Meanwhile, neobanks are banks that do not have any physical branches and are completely available online. That's why online and neobanks are banks that are most convenient for everyone who hates going out or does not have time. Due to neobank service being online, it gave them an opportunity to save more money, because of it they have a lower fee, and created plenty of products. It is also easy to create an account without signing any papers. Online and neobanks provide savings and checking accounts, payment, transfer of savings, financial education tools as well as budgeting help. The risk for online and neobanks is if their system are not protected by Federal Deposit Insurance Corporation. It is important that the user reads the terms and agreement before opening an account. Online banking is secure as long as it is under the Federal Deposit Insurance Corporation. User's tend to use online and neobanks because of their convenience and smooth transactions.

3.3 HOW DOES A BANK WORK?

A bank is a financial institution that manages the money of its clients. It works by securing the money deposits of the clients and offering them services. There are two types of clients a bank will have. They're called a saver, and a borrower, a saver, is the one who deposits the money. Borrowers are clients that apply for loans, and if they have a good credit score they have a good chance of approval. When a borrower gets a loan, the bank will profit because of the interest that is associated with the loans. The money will be returned to the savers account and provide them with interest

for letting the bank use their money for loan transactions. Users must understand what a bank is to be able to use the bank's benefits to its fullest extent. Banks made everyone's life much easier, because they help each person in dealing with money, investments, and properties. The assistance and services that they provide to the public will also help the economy by exchanging goods. Banks are also responsible for making the money for its country and can exchange money to foreign currency. It is also highly protected by the Federal Reserve System and then guarantees that a certain bank is following the rules and regulations of the country. For more information, read

3.4 WHAT KIND OF FINANCIAL INSTITUTION DO MOST PEOPLE DEAL WITH?

The most common financial institution the public uses is commercial banks. It is because commercial banks offer lower service fees that enable clients to keep their accounts open without worrying about them being closed. Their services are not limited as they offer plenty of products to their clients. They provide savings protection, CD investments, properties, and business loans, as well as advanced banking technology. These benefits helped their clients improve the way they manage their money and investments.

Which type of bank is popular in America and UK?

The type of bank that is popular in America and the UK is commercial banks. The reason for it being popular in these countries is that it provides excellent products that are suitable for almost everyone. There are a lot of businesses and large corporations in these countries, and when they use a commercial bank, it offers them liquidity in the market and gives them more advantages in managing their assets.

What are the types of Banking System?

Banks offer financial assistance to anyone, and they take the deposits of their clients, secure their funds, and then offer loans and other benefits to customers. There are a lot of different types of banking systems, and it serves different purposes. The three main banking systems of a bank, are the unit, branch, and group banking. Banks that are small, independent and located in a secluded place and that don't have any other branches are called unit banking. However, branch banking has a variety of services, which are provided to all branches of the bank. Meanwhile, the group banking system is offering a benefit to their group of employees.

Are commercial banks non-profit?

No, commercial banks are profitable banks. It gains through profiting from the services charges they give to the customers. It is possible because of their low charges that enable them to attract

more people to open an account with their bank. Commercial banks also get high interest on the loans that were given to their clients.

3.5 MOST POPULAR TYPES OF BANKS

1. Retail Banks
2. Commercial Banks
3. Investment Banks
4. Universal Banks
5. Credit Unions
6. Private Banks
7. Savings and Loan Banks
8. Islamic Banks
9. Green Banks
10. Challenger Banks
11. Neobanks

An ATM card is a dedicated payment card card issued by a financial institution (i.e. a bank) which enables a customer to access their financial accounts via its and others' automated teller machines (ATMs) and, in some countries, to make approved point of purchase retail transactions. ATM cards are not credit cards or debit cards, however most credit and debit cards can also act as ATM cards and that is the most common way that banks issue cards since the 2010s.

ATM cards are payment card size and style plastic cards with a magnetic stripe and/or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date or CVVC (CVV). ATM cards are known by a variety of names such as bank card, MAC (money access card), client card, key card or cash card, among others. Other payment cards, such as debit cards and credit cards can also function as ATM cards. Charge and proprietary cards cannot be used as ATM cards. The use of a credit card to withdraw cash at an ATM is treated differently to a point of sale transaction, usually attracting interest charges from the date of the cash withdrawal.

Interbank networks allow the use of ATM cards at ATMs of private operators and financial institutions other than those of the institution that issued the cards. The difference between an ATM card and a debit card is the underlying network used to process the transaction. Some debit card

networks started their lives as ATM card networks before evolving into full-fledged debit card networks that include eftpos facilities.

3.5 ATM USES

All ATMs, at a minimum, will permit cash withdrawals of customers of the machine's owner (if a bank-operated machine) and for cards that are affiliated with any ATM network the machine is also affiliated. They will report the amount of the withdrawal and any fees charged by the machine on the receipt. Most banks and credit unions will permit routine account-related banking transactions at the bank's own ATM, including deposits, checking the balance of an account, and transferring money between accounts.

Some ATM cards can also be used at a branch, as identification for in-person transactions.

The use of the ATM card for in store purchases or refunds is allowed only with pre-approved retailers, but not for on-line transactions.

For other types of transactions through telephone or online banking, this may be performed with an ATM card without in-person authentication. This includes account balance inquiries, electronic bill payments, or in some limited cases, online purchases (see Interac Online)

3.6 CARD NETWORKS

ATM cards operate through specific networks. Interlink is just one example of the many ATM networks.

Canada's Interac and Mastercard's Maestro are examples of networks that link bank accounts with point-of-sale equipment.

Some debit card networks also started their lives as ATM card networks before evolving into full-fledged debit card networks such as STAR (Interbank Network), and others such as: Development Bank of Singapore (DBS)'s Network for Electronic Transfers (NETS) and Bank Central Asia (BCA)'s Debit BCA, both of them were later on adopted by other banks (with Prima Debit being the Prima interbank network version of Debit BCA).

3.7 COMMON ATM PROBLEMS AND SOLUTIONS: ENHANCING ATM RELIABILITY

Author: Wavetec Published: August 6, 2024

Automated Teller Machines (ATMs) have become integral to modern banking, providing customers with 24/7 access to cash withdrawals, account information, and other banking services. ATMs offer convenience, speed, and accessibility.

However, various ATM problems can arise with widespread usage, ranging from minor inconveniences to significant disruptions. These issues can lead to customer frustration, financial losses, and security risks.

Addressing these challenges requires a thorough understanding of common ATM problems and solutions, which improves ATM customer experience and is crucial for banks and financial institutions to maintain customer trust and guarantee smooth operations.

Only after identifying and effectively addressing these problems can financial institutions provide a more reliable and secure banking experience for their customers.

COMMON ATM PROBLEMS

Common-ATM-problem-cash-stuck-in-dispenser

Common ATM problems can significantly impact the banking experience for customers, leading to delays, frustration, and even security concerns.

This section will explore some of the most common issues with ATMs, from hardware malfunctions to software glitches and security threats.

Understanding these problems is the first step in finding practical solutions to ensure that ATMs remain reliable and secure for all users.

1. **Hardware Malfunctions:** Hardware issues are among the most common reasons for ATMs not working. They can range from minor inconveniences to severe malfunctions, including:

Card Reader Issues: A frequent problem is the card reader's inability to read debit or credit cards due to wear and tear or debris accumulation. This leads to transaction failures and customer frustration.

Cash Dispensing Problems: ATMs are designed to dispense specific denominations of cash. When hardware malfunctions occur, the ATM might dispense incorrect amounts, get jammed, or fail to release cash.

Printer Jams: ATMs often print transaction receipts. Printer jams can cause delays and result in customers leaving without a receipt, leading to transaction confusion or disputes**.**

2. **Software Glitches:** Software-related issues can be more challenging to diagnose and fix. These glitches may disrupt the smooth operation of ATMs:

Transaction Errors: Software bugs can cause incorrect transaction processing, such as double charging or incomplete transactions, resulting in financial discrepancies.

Screen Freezing: ATMs with touchscreen interfaces can freeze or become unresponsive, preventing customers from completing transactions and causing frustration.

Network Connectivity Issues: ATMs rely on secure networks to communicate with banks. When connectivity is lost or intermittent, it can lead to transaction failures and leave customers wondering why ATMs are not working.

3. **Security Concerns** Security is a significant concern with ATMs, given the sensitive nature of banking transactions. Several common security risks include:

Skimming Devices: Criminals may attach skimming devices to ATMs to steal card information. These devices can be challenging to detect and can lead to identity theft.

PIN Theft: Thieves may use hidden cameras or other techniques to capture Personal Identification Numbers (PINs), putting customers' accounts at risk.

Malware Attacks: ATMs are susceptible to malware attacks, which can compromise the security of transactions and customer information.

IMPACT OF ATM PROBLEMS

A-customer-tightens-fist-in-frustration-due-to-a-malfunctioning-ATM

The impact of ATM problems extends beyond technical issues, affecting both customers and financial institutions. Some of the critical impacts include:

Customer Frustration: When ATMs don't work as expected, it can cause significant inconvenience for customers. This might happen due to card reader issues, cash dispensing problems, or software glitches.

As a result, customers might find themselves in long queues, waiting for a working machine or seeking help from bank staff.

Such experiences often lead to negative customer feedback, impacting overall satisfaction with the banking service.

Customers expect a smooth and quick process, and when ATMs fail, it disrupts their routine, creating dissatisfaction and even resentment towards the bank.

Financial Losses for Banks and Customers: ATM problems can lead to direct financial losses for both banks and customers. For banks, frequent hardware repairs and downtime result in lost revenue and increased maintenance costs.

Moreover, security breaches like skimming devices or malware attacks can lead to unauthorized transactions and financial fraud.

Customers might experience incorrect transactions, double withdrawals, or even account theft, resulting in unexpected charges and the loss of funds.

This can erode trust and trigger a wave of negative customer response, harming the bank's reputation.

Damage to the Reputation of Banks: When ATM problems persist, the damage extends beyond immediate financial losses. Frequent malfunctions and security incidents can tarnish a bank's reputation, decreasing customer trust.

If a bank is known for unreliable ATMs, customers may choose other banks with better queue management and fewer technical issues.

This loss of trust can have long-term effects, with customers sharing their negative experiences through social media and word-of-mouth, deterring others from using the bank's services.

Addressing these ATM problems and solutions promptly is necessary to maintain a positive image and customer loyalty.

When banks proactively tackle issues, they demonstrate a commitment to customer satisfaction, helping to rebuild trust and ensure a more reliable banking experience for their clientele.

SOLUTIONS TO ATM PROBLEMS

When addressing ATM problems and solutions, banks must consider a comprehensive approach that tackles hardware and software issues. This requires improved maintenance, technology upgrades, customer education, and enhanced surveillance.

Effective solutions resolve existing problems and help prevent future issues, ensuring that ATMs remain reliable and secure touchpoints for customers to conduct their banking transactions confidently.

Enhanced Maintenance Protocols: Regular maintenance and prompt repairs are crucial to ensure ATMs operate smoothly. Effective maintenance protocols include:

Regular Inspection and Cleaning: Routine inspections and cleaning of ATMs can prevent hardware issues and ensure consistent operation.

Prompt Repair Services: When ATM problems arise, a quick and efficient repair team can minimize downtime and customer inconvenience.

Upgraded Technology: Technological advancements can help mitigate ATM problems and increase security. Some key upgrades include:

EMV Chip Technology: EMV chip cards offer greater security than traditional magnetic stripe cards, reducing the risk of skimming and unauthorized access.

Advanced Encryption Methods: Stronger encryption techniques can safeguard customer data and reduce the likelihood of security breaches.

Improved Customer Education: Educating customers about ATM safety and best practices is necessary for preventing security risks and addressing common problems. Effective customer education involves:

Awareness Campaigns on Security Measures: Banks can conduct campaigns to inform customers about skimming devices, PIN theft, and other risks, encouraging vigilance when using ATMs.

Guidance on Transaction Procedures: Providing clear instructions on using ATMs can reduce transaction errors and improve the overall customer experience.

Enhanced Surveillance: Surveillance is critical in detecting and preventing security risks at ATMs and other ATM problems. Key measures include:

CCTV Cameras: Installing high-quality CCTV cameras around ATMs can deter criminal activity and provide evidence in case of incidents.

Fraud Detection Systems: Advanced systems can monitor ATM activity for suspicious patterns, enabling banks to respond quickly to potential security threats.

Future Trends and Innovations

A-customer-doing-biometric-authentication-at-an-ATM

As technology evolves, future trends and innovations can address existing ATM problems and solutions while adding to the customer journey.

- **Biometric Authentication**

Biometric technology, including fingerprint or facial recognition, is increasingly used to boost ATM security. By linking ATM transactions to unique physical features, this technology reduces the risk of unauthorized access and potential fraud.

It provides a more secure alternative to traditional PIN-based systems, which are susceptible to theft and unauthorized sharing.

Introducing biometrics can significantly reduce ATM problems and solutions related to unauthorized access and improve customer confidence.

- **Contactless Transactions**

Contactless technology is gaining popularity. It allows customers to complete transactions without inserting their cards, reducing wear and tear on card readers and minimizing the risk of skimming devices attached to ATMs.

With contactless transactions, users can tap their cards or use mobile devices like smartphones or smartwatches to complete transactions.

This addresses why ATMs are not working due to mechanical failures, improves transaction speed, reduces queuing times, and improves overall customer involvement.

- **AI-Powered Maintenance Predictions**

Artificial intelligence (AI) can predict when ATMs will likely experience issues. AI-powered maintenance predictions use data and analytics to identify potential problems before they occur, allowing banks to schedule maintenance proactively.

This approach reduces ATM downtime and ensures a smoother banking experience for customers. With AI monitoring, banks can quickly address common ATM problems, such as hardware malfunctions and software glitches, before they impact customer service.

This leads to fewer interruptions, better queue management, and increased customer satisfaction.

Functions money

Monetary economics

In Money and the Mechanism of Exchange (1875), William Stanley Jevons famously analyzed money in terms of four functions: a medium of exchange, a common measure of value (or unit of account), a standard of value (or standard of deferred payment), and a store of value. By 1919, Jevons's four functions of money were summarized in the couplet:

Money's a matter of functions four,

A Medium, a Measure, a Standard, a Store.

This couplet would later become widely popular in macroeconomics textbooks.[21] Most modern textbooks now list only three functions, that of medium of exchange, unit of account, and store of value, not considering a standard of deferred payment as a distinguished function, but rather subsuming it in the others.

There have been many historical disputes regarding the combination of money's functions, some arguing that they need more separation and that a single unit is insufficient to deal with them all. One of these arguments is that the role of money as a medium of exchange conflicts with its role

as a store of value: its role as a store of value requires holding it without spending, whereas its role as a medium of exchange requires it to circulate.[24] Others argue that storing of value is just deferral of the exchange, but does not diminish the fact that money is a medium of exchange that can be transported both across space and time. The term "financial capital" is a more general and inclusive term for all liquid instruments, whether or not they are a uniformly recognized tender.

Medium of exchange

When money is used to intermediate the exchange of goods and services, it is performing a function as a medium of exchange. It thereby avoids the inefficiencies of a barter system, such as the inability to permanently ensure "coincidence of wants". For example, between two parties in a barter system, one party may not have or make the item that the other wants, indicating the non-existence of the coincidence of wants. Having a medium of exchange can alleviate this issue because the former can have the freedom to spend time on other items, instead of being burdened to only serve the needs of the latter. Meanwhile, the latter can use the medium of exchange to seek for a party that can provide them with the item they want.

Measure of value

A unit of account (in economics) is a standard numerical monetary unit of measurement of the market value of goods, services, and other transactions. Also known as a "measure" or "standard" of relative worth and deferred payment, a unit of account is a necessary prerequisite for the formulation of commercial agreements that involve debt.

Money acts as a standard measure and a common denomination of trade. It is thus a basis for quoting and bargaining of prices. It is necessary for developing efficient accounting systems like double-entry bookkeeping.

Store of value To act as a store of value, money must be able to be reliably saved, stored, and retrieved—and be predictably usable as a medium of exchange when it is retrieved. The value of the money must also remain stable over time. Some have argued that inflation, by reducing the value of money, diminishes the ability of the money to function as a store of value

Properties

The functions of money are that it is a medium of exchange, a unit of account, and a store of value. To fulfill these various functions, money must be

Fungible: its individual units must be capable of mutual substitution (i.e., interchangeability).

Durable: able to withstand repeated use.

CHAPTER FOUR

4.1 MONEY SUPPLY

Money Base, M1 and M2 in the U.S. from 1981 to 2012

Printing paper money at a printing press in Perm

A person counts a bundle of different Swedish banknotes.

In economics, money is any financial instrument that can fulfill the functions of money (detailed above). These financial instruments together are collectively referred to as the money supply of an economy. In other words, the money supply is the number of financial instruments within a specific economy available for purchasing goods or services. Since the money supply consists of various financial instruments (usually currency, demand deposits, and various other types of deposits), the amount of money in an economy is measured by adding together these financial instruments creating a monetary aggregate.

Economists employ different ways to measure the stock of money or money supply, reflected in different types of monetary aggregates, using a categorization system that focuses on the liquidity of the financial instrument used as money. The most commonly used monetary aggregates (or types of money) are conventionally designated M1, M2, and M3. These are successively larger aggregate categories: M1 is currency (coins and bills) plus demand deposits (such as checking accounts); M2 is M1 plus savings accounts and time deposits under $100,000; M3 is M2 plus larger time deposits and similar institutional accounts. M1 includes only the most liquid financial instruments, and M3 relatively illiquid instruments. The precise definition of M1, M2, etc. may Be different in different countries.

Another measure of money, M0, is also used. M0 is base money, or the amount of money actually issued by the central bank of a country. It is measured as currency plus deposits of banks and other institutions at the central bank. M0 is also the only money that can satisfy the reserve requirements of commercial banks.

Creation of money In current economic systems, money is created by two procedures:[citation needed]

Legal tender, or narrow money (M0) is the cash created by a Central Bank by minting coins and printing banknotes.

Bank money, or broad money (M1/M2) is the money created by private banks through the recording of loans as deposits of borrowing clients, with partial support indicated by the cash ratio. Currently, bank money is created as electronic money.

Bank money, whose value exists on the books of financial institutions and can be converted into physical notes or used for cashless payment, forms by far the largest part of broad money in developed countries.

Market liquidity "Market liquidity" describes how easily an item can be traded for another item, or into the common currency within an economy. Money is the most liquid asset because it is universally recognized and accepted as a common currency. In this way, money gives consumers the freedom to trade goods and services easily without having to barter.

Liquid financial instruments are easily tradable and have low transaction costs. There should be no (or minimal) spread between the prices to buy and sell the instrument being used as money.

4.2 TYPES

Commodity money

A 1914 British gold sovereign

Many items have been used as commodity money such as naturally scarce precious metals, conch shells, barley, beads, etc., as well as many other things that are thought of as having value. Commodity money value comes from the commodity out of which it is made. The commodity itself constitutes the money, and the money is the commodity. Examples of commodities that have been used as mediums of exchange include gold, silver, copper, rice, Wampum, salt, peppercorns, large stones, decorated belts, shells, alcohol, cigarettes, cannabis, candy, etc. These items were sometimes used in a metric of perceived value in conjunction with one another, in various commodity valuation or price system economies. The use of commodity money is similar to barter, but a commodity money provides a simple and automatic unit of account for the commodity which is being used as money. Although some gold coins such as the Krugerrand are considered legal tender, there is no record of their face value on either side of the coin. The rationale for this is that emphasis is laid on their direct link to the prevailing value of their fine gold content. American Eagles are imprinted with their gold content and legal tender face value.

Representative

In 1875, the British economist William Stanley Jevons described the money used at the time as "representative money". Representative money is money that consists of token coins, paper money

or other physical tokens such as certificates, that can be reliably exchanged for a fixed quantity of a commodity such as gold or silver. The value of representative money stands in direct and fixed relation to the commodity that backs it, while not itself being composed of that commodity.

Fiat

Gold coins are an example of legal tender that are traded for their intrinsic value, rather than their face value.

Fiat money or fiat currency is money whose value is not derived from any intrinsic value or guarantee that it can be converted into a valuable commodity (such as gold). Instead, it has value only by government order (fiat). Usually, the government declares the fiat currency (typically notes and coins from a central bank, such as the Federal Reserve System in the U.S.) to be legal tender, making it unlawful not to accept the fiat currency as a means of repayment for all debts, public and private.

Some bullion coins such as the Australian Gold Nugget and American Eagle are legal tender, however, they trade based on the market price of the metal content as a commodity, rather than their legal tender face value (which is usually only a small fraction of their bullion value).

Fiat money, if physically represented in the form of currency (paper or coins), can be accidentally damaged or destroyed. However, fiat money has an advantage over representative or commodity money, in that the same laws that created the money can also define rules for its replacement in case of damage or destruction. For example, the U.S. government will replace mutilated Federal Reserve Notes (U.S. fiat money) if at least half of the physical note can be reconstructed, or if it can be otherwise proven to have been destroyed. By contrast, commodity money that has been lost or destroyed cannot be recovered.

Coinage

Ancient Jewish coin, engraved menorah, from the Hasmoneon kingdom 37-40 BCE

These factors led to the shift of the store of value being the metal itself: at first silver, then both silver and gold, and at one point there was bronze as well. Now we have copper coins and other non-precious metals as coins. Metals were mined, weighed, and stamped into coins. This was to assure the individual taking the coin that he was getting a certain known weight of precious metal. Coins could be counterfeited, but they also created a new unit of account, which helped lead to banking. Archimedes' principle provided the next link: coins could now be easily tested for their

fine weight of the metal, and thus the value of a coin could be determined, even if it had been shaved, debased or otherwise tampered with (see Numismatics).

In most major economies using coinage, copper, silver, and gold formed three tiers of coins. Gold coins were used for large purchases, payment of the military, and backing of state activities. Silver coins were used for midsized transactions, and as a unit of account for taxes, dues, contracts, and fealty, while copper coins represented the coinage of common transaction. This system had been used in ancient India since the time of the Mahajanapadas. In Europe, this system worked through the medieval period because there was virtually no new gold, silver, or copper introduced through mining or conquest.[citation needed] Thus the overall ratios of the three coinages remained roughly equivalent.

Paper: Banknote

Huizi currency, issued in 1160

In premodern China, the need for credit and for circulating a medium that was less of a burden than exchanging thousands of copper coins led to the introduction of paper money. This economic phenomenon was a slow and gradual process that took place from the late Tang dynasty (618–907) into the Song dynasty (960–1279). It began as a means for merchants to exchange heavy coinage for receipts of deposit issued as promissory notes from shops of wholesalers, notes that were valid for temporary use in a small regional territory. In the 10th century, the Song dynasty government began circulating these notes amongst the traders in their monopolized salt industry. The Song government granted several shops the sole right to issue banknotes, and in the early 12th century the government finally took over these shops to produce state-issued currency. Yet the banknotes issued were still regionally valid and temporary; it was not until the mid 13th century that a standard and uniform government issue of paper money was made into an acceptable nationwide currency. The already widespread methods of woodblock printing and then Pi Sheng's movable type printing by the 11th century was the impetus for the massive production of paper money in premodern China.

4.3 PAPER MONEY FROM DIFFERENT COUNTRIES

At around the same time in the medieval Islamic world, a vigorous monetary economy was created during the 7th–12th centuries on the basis of the expanding levels of circulation of a stable high-value currency (the dinar). Innovations introduced by economists, traders and merchants of the Muslim world include the earliest uses of credit, cheques, savings accounts, transactional accounts,

loaning, trusts, exchange rates, the transfer of credit and debt, and banking institutions for loans and deposits.[41][need quotation to verify]

In Europe, paper money was first introduced in Sweden in 1661. Sweden was rich in copper, thus, because of copper's low value, extraordinarily big coins (often weighing several kilograms) had to be made. The advantages of paper currency were numerous: it reduced transport of gold and silver, and thus lowered the risks; it made loaning gold or silver at interest easier since the specie (gold or silver) never left the possession of the lender until someone else redeemed the note; and it allowed for a division of currency into credit and specie backed forms. It enabled the sale of stock in joint stock companies, and the redemption of those shares in the paper.

However, these advantages are held within their disadvantages. First, since a note has no intrinsic value, there was nothing to stop issuing authorities from printing more of it than they had specie to back it with. Second, because it increased the money supply, it increased inflationary pressures, a fact observed by David Hume in the 18th century. The result is that paper money would often lead to an inflationary bubble, which could collapse if people began demanding hard money, causing the demand for paper notes to fall to zero. The printing of paper money was also associated with wars, and financing of wars, and therefore regarded as part of maintaining a standing army. For these reasons, paper currency was held in suspicion and hostility in Europe and America.

Banknotes of different currencies with a face value of 5000

By 1900, most of the industrializing nations were on some form of a gold standard, with paper notes and silver coins constituting the circulating medium. Private banks and governments across the world followed Gresham's law: keeping gold and silver paid but paying out in notes. This did not happen all around the world at the same time, but occurred sporadically, generally in times of war or financial crisis, beginning in the early part of the 20th century and continuing across the world until the late 20th century, when the regime of floating fiat currencies came into force. One of the last countries to break away from the gold standard was the United States in 1971.

No country anywhere in the world today has an enforceable gold standard or silver standard currency system.

4.4 COMMERCIAL BANK: DEMAND DEPOSIT

A check, used as a means of converting funds in a demand deposit to cash

Commercial bank money or demand deposits are claims against financial institutions that can be used for the purchase of goods and services. A demand deposit account is an account from which

funds can be withdrawn at any time by check or cash withdrawal without giving the bank or financial institution any prior notice. Banks have the legal obligation to return funds held in demand deposits immediately upon demand (or 'at call'). Demand deposit withdrawals can be performed in person, via checks or bank drafts, using automatic teller machines (ATMs), or through online banking.

Commercial bank money is created by commercial banks whose reserves (held as cash and other highly liquid assets) typically constitute only a fraction of their deposits, while the banks maintain an obligation to redeem all these deposits upon demand – a practise known as fractional-reserve banking.

The money multiplier theory presents the process of creating commercial bank money as a multiple (greater than 1) of the amount of base money created by the country's central bank, the multiple itself being a function of the legal regulation of banks imposed by financial regulators (e.g., potential reserve requirements) beside the business policies of commercial banks and the preferences of households – factors which the central bank can influence, but not control completely. Contemporary central banks generally do not control the creation of money, nor do they try to, though their interest rate-setting monetary policies naturally affect the amount of loans and deposits that commercial banks create.

4.5 DIGITAL OR ELECTRONIC: DIGITAL MONEY

The development of computer technology in the second part of the twentieth century allowed money to be represented digitally. By 1990, in the United States all money transferred between its central bank and commercial banks was in electronic form. By the 2000s most money existed as digital currency in bank databases.

In 2012, by number of transaction, 20 to 58 percent of transactions were electronic (dependent on country).

Anonymous digital currencies were developed in the early 2000s. Early examples include Ecash, bit gold, RPOW, and b-money. Not much innovation occurred until the conception of Bitcoin in 2008, which introduced the concept of a decentralised currency that requires no trusted third party.

CHAPTER FIVE

5.1 CONCLUSION

ATMs are essential to modern banking, offering convenience and accessibility to customers. However, ATM problems can lead to customer frustration, financial losses, and security risks.

Banks can improve ATM reliability and security by understanding common issues and implementing practical solutions.

Enhanced maintenance protocols, upgraded technology, improved customer education, and better surveillance are critical steps in addressing ATM problems and solutions.

Future trends, such as biometric authentication, contactless transactions, and AI-powered maintenance predictions, promise to revolutionize ATM operations, ensuring customers a smooth and secure banking experience.

Money is any item or verifiable record that is generally accepted as payment for goods and services and repayment of debts, such as taxes, in a particular country or socio-economic context. The primary functions which distinguish money are: medium of exchange, a unit of account, a store of value and sometimes, a standard of deferred payment.

Money was historically an emergent market phenomenon that possessed intrinsic value as a commodity; nearly all contemporary money systems are based on unbacked fiat money without use value. Its value is consequently derived by social convention, having been declared by a government or regulatory entity to be legal tender; that is, it must be accepted as a form of payment within the boundaries of the country, for “all debts, public and private”, in the case of the United States dollar.

The money supply of a country comprises all currency in circulation (banknotes and coins currently issued) and, depending on the particular definition used, one or more types of bank money (the balances held in checking accounts, savings accounts, and other types of bank accounts). Bank money, whose value exists on the books of financial institutions and can be converted into physical notes or used for cashless payment, forms by far the largest part of broad money in developed countries