# "SYMBI BANK - A Bank for every Symbian"



# PROJECT REPORT SUBMITTED TO Symbiosis Institute of Geoinformatics

#### FOR PARTIAL FULFILLMENT OF THE M. Sc. DEGREE

By

Ayan Datta, Ritwik Dubey, Kinjal Bandopadhyay, Priyal Dighe, Prachi Kamble, Sampurna Mondal, Juned Manyar, Ajinkya Kadam PRN (22070243006, 38, 28, 16, 25, 41, 23, 24)

M.Sc. (Data Science and Spatial Analytics)

BATCH 2022 - 2024

Symbiosis Institute of Geoinformatics

Symbiosis International (Deemed University)
5th Floor, Atur Centre
Gokhale Cross Road
Model Colony
Pune – 411016
Maharashtra
India

October 2022

# **Acknowledgement:**

Place: Symbiosis Institute of Geoinformatics, Pune

Date: 13th October, 2022

On this great occasion of accomplishment of our project on "SYMBI BANK - A Bank for every Symbian", we would like to sincerely express our gratitude to Dr. Aparna Joshi, who has been a great supporter throughout the completion of this project.

We are also thankful to our Director **Dr. T.P. Singh** and our Deputy Director **Dr. Vidya Patkar** of **Symbiosis Institute of Geoinformatics** for providing all the required facilities in completion of this project.

Finally, as one of the team members, I would like to appreciate all my group members for their support and coordination. I hope we will achieve more in our future endeavors.

Ayan Datta (06)

Ritwik Dubey (38)

Kinjal Bandopadhyay (28)

Priyal Dighe (16)

Prachi Kamble (25)

Sampurna Mondal (41)

Juned Manyar (23)

Ajinkya Kadam (24)

**Preface:** 

Dear Reader,

I am writing this report as part of my coursework for Symbiosis Institute of Geoinformatics. The

purpose of this report is to provide a comprehensive overview about the policy, rules,

regulations and guidelines of the SYMBI Bank.

This report summarizes the findings of our study on how to improve customer relations, trust and

prevent losses at SYMBI Bank. After going through the policies and guidelines of several

different banking organizations, we have formed a set of rules, regulations and policies which

makes our Bank a premier banking organization for common people, especially Students. Our

documentation is based on our findings. We would like to thank everyone and every organization

who contributed to this complete documentation.

I would like to thank Dr. Aparna Joshi for her guidance and support throughout this project. I

would also like to thank my team members for their help.

Lastly, I would like to ask anyone reading this report to use it carefully and responsibly. It is

intended for academic purposes only.

Sincerely,

Ayan Datta (06)

Ritwik Dubey (38)

Kinjal Bandopadhyay (28)

*Priyal Dighe (16)* 

Prachi Kamble (25)

Sampurna Mondal (41)

Juned Manyar (23)

Ajinkya Kadam (24)

Symbiosis Institute of Geoinformatics, Pune

# **Introduction to Project Topic:**

Our project topic is based on a banking organization, **SYMBI BANK**. We as a group prepared **rules, regulations and policies** and loan approval for our Bank.

The policy dosier consists of:

- i) Information governance,
- ii) Data protection,
- iii) Data security and
- iv) Policies of the bank.

It contains recommendations for technologies and tools for **data privacy** and **protection**. It demonstrates the bank compliance with standard regulation, **government policies** and **procedures** and customer satisfaction with the bank regarding their loan approval. In this project, we are keeping in mind the various losses banking organizations face. We have developed certain rules and policies which prevent our bank from facing such losses, keeping in mind customer data privacy.

Whenever a customer applies for a **loan approval**. Our bank checks the customer's credit history and credit worthiness. The higher the customer's credit score, the better are the chances of the customer's loan application getting approved.

# Introduction to the Organization: SYMBI Bank - "A Bank for every Symbian"

SYMBI Bank - "A Bank for every Symbian". We at SYMBI bank believe in making banking an accessible, friendly, and hassle-free experience for every Symbian. Established in 2022, we are bringing in new energy for today's youth. We have an elite core team of banking professionals. SYMBI Bank - A bank for Symbian and by the Symbian. The bank's policies are specially designed to provide maximum benefits to students. Loans at low-interest rates, fixed deposits at reasonable interest rates, and student-friendly insurance policies make SYMBI Bank a student-friendly bank. We also provided the latest Net Banking facilities. We use the latest technologies, including AI, to offer a personalized banking experience. Our features also include a well-defined Data Production Policy for the protection of customer data.

The head office of the bank is located at Model Colony, Pune. We have multiple branches across Pune. The timings are 9 to 5 but are online help services are available 24/7 for our esteemed customers.

#### Who we are

A Bank for every Symbian. We at SYMBI bank believe in making banking an accessible, friendly, and hassle-free experience for every Symbian. Established in 2022, we are bringing in new energy for today's youth. We have an elite core team of banking professionals. SYMBI Bank- A bank for Symbian and by the Symbian. The bank's policies are specially designed to provide maximum benefits to students. Loans at low-interest rates, fixed deposits at reasonable interest rates, and student-friendly insurance policies!

#### What we do

Offering all students, a platform for Investing and managing their funds with professionals and with the help of direct tie-up with all symbiosis institutes

#### Our properties

We have professionals to handle all your funds. You can come to us and let us be partners in finance journey. We will help you organize your finances. And we will help you to make the feature you have imagined.

#### Contact us

Phone 505-216-1561 411016, Model colony Gokhlenagar , Pune

Visit our website symbibank.com symbibank@gmail.com

# **SYMBI BANK**



Bank for Students



#### Financial services



Investment management



Funds and Fees management



Loan Facilities for students

#### Financial Services

- Fund management
- Fees management
- Educational loan
- Start-up finance
- Sponsors tie-up
- · Investment planning







# BEST FINANCIAL SOLUTIONS TO ADVANCE YOUR FUNDS & INVESTMENT

We use the latest technologies, including AI, to offer a personalized banking experience. Our features also include a well-defined Data Production Policy for the protection of customer data.

he head office of the bank is located at Model Colony, Pune. We have multiple branches across Pune. The timings are 9 to 5 but are online help services are available 24/7for our esteemed customers.



# **Policy:**

#### **Introduction to Information Governance in SYMBI Bank:**

First, information governance is an emergent concept in the IS/IT field and at the same time is an increasingly important subject in the banking industry. The comments made by top bank executives emphasize this.

- Among the reasons given for this importance are the benefits provided such as reduced costs, reduced exposure to legal risk, and improved performance.
- Second, developing and implementing an information Governance Framework (IGF) is accepted as a natural course of action, though there is no one-size-fits-all solution.
- Third, the IGF is composed of multiple dimensions and factors to give flexibility and balance to the model.

Finally, we conclude that IGF for banks would include the following factors: accessibility, accountability, communication, compliance, consumerization, context, culture, ethics, formal structure, mobility, monitoring, privacy, quality, retention, security, sharing, standardization, systems, transparency, and value.

Which factors contained in the IGF presented herein will be considered of importance by an organization and which will not depend on that organization's particular level of maturity, its own characteristics, and its decisions regarding the desired improvements.

This documentation proposes a new concept for Information Governance. Information governance is seen as the establishment of policies, through formal structures that define rules, procedures and decision-making rights regarding information management, in order to mitigate regulatory and operational risk, reduce costs and optimize the performance of the organizations.

### Why SYMBI Bank?

There are many banks all around India but here are some eminent reasons which gives you a reason to choose SYMBI Bank over other banks in India:

#### 1. Time Efficiency

For retail banking customers the time pressure is huge. "Running out of time", "Trying to save some time" or "Being against the clock" are probably the most popular expressions for your customers' day-to-day lives. So, what they really need is to make transactions faster. They are looking for faster and easier services for routine banking transactions.

#### 2. Security Guarantees

From the very first interaction all bank customers need to know that every service is secure and able to keep their personal data safe. Customers expect that the bank will provide them with

enough information on how its services work and how safe they are. They are also expecting real-time support every time they have questions or doubts about their data security.

#### 3. Cost optimization

Faster and more efficient services mean real benefits for customers but also reduced costs for banks. Your customers expect their bank to rationalize their operation so as to provide competitive pricing and a full benefits package: personalized experience at an affordable price.

#### 4. Unique experience & flexibility

Retail banking customers need a variety of options, close attention and relevant offers from their bank. The banking environment is competitive and customers migrate from a bank to another very often. Until enrolling them in any loyalty program, banks must provide them with flexible and personalized services that respond correctly to their specific needs.

#### 5. Common social values

Retail banking customers perceive financial brands beyond their services. A bank should constantly prove its interest to provide a solution for a better future. Customers expect that the bank's voice expresses strong social values such as respect for the environment, support for national businesses, involvement in educational programs.

#### 6. Personalized communication

Customers today no longer perceive banks as institutions to deposit and withdraw money. In fact, they look forward to banks communicating with them on a personal level. Apart from dedicated relationship managers, they want a second option with which they can connect instantly and conveniently.

#### 7. Prediction of needs

With banking becoming progressive, customers expect the technology deployed to predict their needs and suggest products accordingly. They want their banking technology to give them a customized solution to their requirements, which don't follow a 'one-size-fits-all' approach.

#### 8. Interest policies of Bank

This is one of the main things which affects the mindset of customers for approaching a bank. Customers will check the interest bank is giving on the funds they are willing to put in the bank or the interest rates on their different loan policies. If these policies are beneficial to customers and more efficient than other banks then the customer will surely be going to approach that bank.

#### 9.One-stop destination for all needs

Today, customers expect their banks to be a one-stop destination for all their needs. Be it applying for a loan, transferring money or paying for utilities, banks need to provide all these services on a single platform.

#### 10. Authenticity Instead of Loyalty

They don't stick with brands and are not loyal to them. Why? Because they can find hundreds of the same offers online, evaluate them with ratings and reviews, and choose the most suitable one. Unlike the traditional approach of creating brand value through mass advertising, multiple repetitions, and a unique proposal, in future, the main value of any brand will be its social capital: the number of fans recommending this service and hyping it online.

#### 11.Digital services

More consumers than ever are using technology to access financial services. As a result, their expectations are higher than ever. So, much so that consumers don't hesitate to switch banks if their digital experience isn't up to scratch. In fact, consumers rank both online banking capabilities and mobile banking capabilities in their top four reasons for switching banks — outranked only by protection of their data and prices and fees.

#### 12. Customers want easy-to-use and transparent mobile applications

Customers today are digital-savvy. They want a banking option available at the tap of their smartphones, a device that they use for almost all their online engagements. This is why it is a necessity for mobile banking services to have an intuitive, user-friendly interface. In addition, a consistent and transparent browsing experience improves user engagement.

Not only such wonderful facilities but along with the facility we also ensure your financial security. Here are some key features that ensure Customers financial Security in our Bank:

#### 1. Authentication

Authentication requires that every transaction in the bank takes place after confirming the identity of the person initiating the transaction. This applies to the customers logging in to online or mobile banking systems, to those visiting the bank in person, or to those using credit/debit cards at POS terminals and ATMs. It also applies to bank employees who have access to customers' and banks' data.

#### 2. Audit Trails

A history of banking transactions was always available as a statement or passbook. Additionally, banking systems also maintain an audit trail for every event that takes place during a customer's interaction with the systems. Whether it is a customer using phone banking or online banking, the time of the interaction is recorded along with the details of the interaction. This data is backed up daily and is never purged completely but archived at defined time intervals.

#### 3. Secure Infrastructure

Secure infrastructure implies the database systems and servers where data is stored and the boundaries established to secure these. Production data is usually encrypted in any core banking system. If required for testing, it is mandatory that important data like bank account number,

customer name, and address be masked. Access to production systems is restricted. Vendors who deal with infrastructure are generally different from those who deal with applications. Bank employees are usually given special equipment where access to social websites, personal emails, and USB ports is blocked. Employees can only access the banks' network over a VPN when using public Wi-Fi.

#### 4. Secure Processes

Banks have established many processes to ensure that security is implemented and tested. This includes KYC (Know Your Customer) updates for customers, NDA (Non-disclosure agreement) for employees and vendors, securing special zones within the premises and remote data centers. With Data Loss Prevention (DLP) solutions, banks can mitigate insider threats and safeguard customers' personal data like names and credit card numbers

#### 5. Continuous Communication

Banks also communicate regularly with consumers on upgrades to systems, the introduction of new authentication procedures, etc., in addition to the periodic account statements that are generated and sent to customers. Customers can also set limits and alerts based on different conditions to ensure that they are informed if any unexpected activity takes place concerning their accounts.

#### 6. Restrict access to your accounts

Confidential information must be kept only by you. No matter how much you trust a person, never reveal confidential information about your accounts to them. You might not know who is ready to steal from you.

#### 7. Two-Factor Authentication

Many high-value business bank accounts require users to enter a username and password, as well as a randomly generated code that changes every thirty seconds. You can also use this technology in personal accounts.

#### 8. Cloud Governance for Financial Services

Cloud Governance for Financial Services is a framework to guide customers in establishing processes and selecting tools to manage and govern their environment. Financial institutions are able to define requirements for security, cost, and ongoing oversight for their cloud journey; ensure processes are optimized and consistently followed; and implement solutions to measure cloud health at scale.

#### 9. Bank's security Documentation

The security documentation repository shows customers how to configure the bank's services to meet their organization's security and compliance objectives. Customers benefit from data centres and network architectures that are built to meet the requirements of the most security-sensitive organizations.

#### 10. Overdraft Facilities

Bank overdraft means banks provide a short credit fund to smoothen out cash flow for business needs. An individual or a business can get in touch with a bank representative to know the overdraft ceiling limit permitted for your account. You can borrow up to the permitted amount for which the bank charges interest on the overdrawn fund.

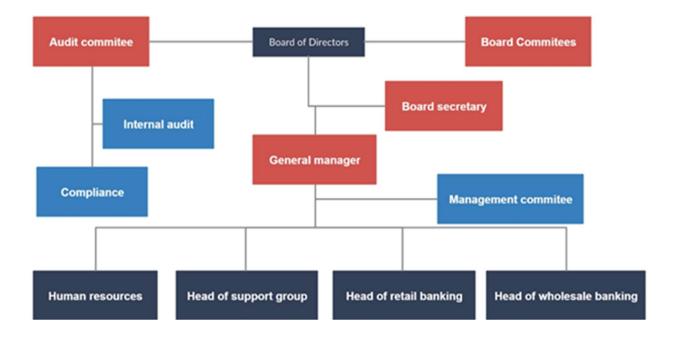
#### 11. Insurance Facilities

Banks facilitate insurance for their customers to cover their risk by merely paying a small amount as a part of the premium. Insurance covers risk for your assets, health, etc. The Breakdown of insurance options provided by the bank includes: Car Insurance which covers the cost of repair, damages or replacement for theft, Home Insurance cover loss due to damage by natural calamities, fire or burglary, etc.

#### 12. Foreign Exchange Facilities

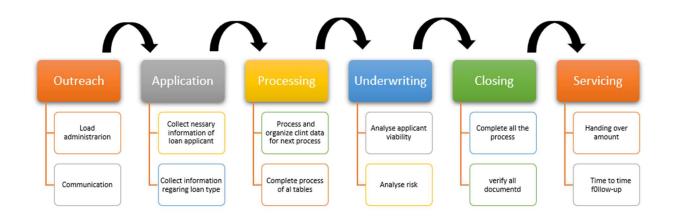
Our banks also provide foreign exchange broking and services to the customers around the world. These Foreign exchange services consist of currency exchange where customers can exchange different currency notes, wire transfer where customers can pay or transfer funds to the customer located outside countries, remittance services where migrant employees can transfer money to their home country.

### **Organizational Structure of the Bank:**



### **Loan Section (Types and Approval):**

### **Bank Loan Processing Life Cycle:**



There are various types of loans available in India based on the purpose they are used for they are classified into following types:

#### 1. Secured Loans

Collateral is put up as security for the amount of money you are borrowing from the lender for loans that demand it. In this manner, the lender will still have a mechanism to recover their funds if you are unable to repay the loan. When compared to loans with no collateral, secured loans typically have cheaper interest rates.

#### 2. Loan Against Property

A Loan Against Property is popular and oft availed. Borrowers pledge their property against which they stand to receive sizable sanctions that they can use to address any expense of their choice.

#### 3. Home Loan

Home Loans concentrates on providing large funding to assist you in buying a property. The asset being acquired is the collateral in the case of a home loan. Upon full repayment, the borrower receives ownership of the asset.

#### 4. Gold Loan

Gold jewelry can be pledged as collateral for loans with this option. A gold loan is typically used to fund urgent expenses.

#### 5. Loans against Mutual Funds

Loans against mutual funds and shares offer similar provisions, where one uses their mutual fund investments or shares as loan collateral.

When you need a loan from any financial institution, your fixed deposit can also save the day. The loan amount can range between 70% and 90% of the fixed deposit's value, and its term will be equal to that of the fixed deposit.

#### 6. Unsecured Loans

Unsecured loans don't require any kind of security to be approved or paid out. These loans are granted based on a person's credit history. Therefore, you must make sure that your credit profile is strong if you ever desire this form of loan.

#### 7. Personal Loan

You can obtain a personal loan to meet your unique demands. One of the most common unsecured loans is a personal loan because of its broad variety of applications and lack of enduse limitations. However, compared to secured loans, the interest rate for a personal loan is higher due to its unsecured character.

#### 8. Business Loans

In India, short-term business loans are highly popular and can take many different forms, including loans for manufacturers, service businesses, traders, working capital, and machinery. These are made to assist business owners in meeting their immediate financial needs.

#### 9. Education Loan

For students who require financial support to cover the costs of higher education, education loans are available. In contrast to the parents or guardians who are co-applicants, the student is the primary borrower.

#### 10. Car Loan

Given the high demand for cars in India, car loans are very common there. With simple eligibility requirements, these loans provide competitive interest rates.

#### Major factors that are looked at for loan approval

#### 1. Credit Score

Your credit score is a key factor in determining whether the lender will move on with your application or reject it at the preliminary stage. Particularly in the case of unsecured loans, this is true.

Given that a credit score is a representation of a borrower's credit history, the lender can determine whether or not the borrower can make payments on time by reviewing the borrower's repayment history. The lender's assessment following the required analysis forms the basis for the loan acceptance.

#### 2. Income and Employment History

The acceptance of your loan also heavily depends on your monthly or yearly income and employment history. The lender may or may not be persuaded that you will be able to repay the loan based on your income and income stability demonstrated by a continuous and stable work history

Even if you work for yourself, the lender will believe that you have a successful business that has had a respectable turnover over the past few years.

#### 3. Debt-to-income ratio

Your debt-to-income ratio is also crucial, in addition to having a good salary. You won't be given a new loan if your monthly income is more than Rs. 1 lakh and your debt repayment obligations already total more than Rs. 75,000. This is because you'll need the money left over to cover your household bills.

Because of this, regardless of your salary, you must have a low debt-to-income ratio in order for the lenders to believe that you have enough money available each month to make the repayments as well as take care of household obligations.

#### 4. Collateral

The lender may determine the interest rate that will be applied to your loan based on the collateral you submit and its current market value. Lenders will feel more confident in the transaction if collateral is provided, which could lead to a decrease in interest rates. Given that it has a higher interest rate than secured loans, unsecured loans are notorious.

#### 5. Down Payment

The lender's confidence in you will grow as a result of the money you have saved and the successful implementation of your down payment savings plan. Lower borrowing requirements are associated with bigger down payments.

# Verification and Authentication at SYMBI bank for Different Loans:

### Home loan verification & authentication process by SYMBI banks:

- The verification process for house loans is among the most crucial steps in the loan approval process. After you submit the required papers for a home loan application, the lender verifies the accuracy of the information by conducting multiple background checks.
- Another component of this is the technological and legal verification of property. Only when the borrower's complete and accurate paperwork is submitted do lenders accept loans.
- In order to assess your creditworthiness, the lender will also consider your qualifications, monthly and yearly income, past interactions with the lender, employment history, and ability to repay the mortgage.
- In addition, the lender will investigate any outstanding legal matters with the property you want to buy and evaluate its structural soundness.
- The lender will send a group of professionals, primarily lawyers, to verify the ownership documentation for the property, including NOCs and title deeds, among others.
- For the purpose of technically verifying the property, the lender would have to look at the property's physical state, market value, and a number of other construction factors. In order for your mortgage to be verified, the property you wish to purchase must have been constructed in accordance with all current, governmental specifications.

## Car Loan verification & authentication process by SYMBI Banks:

Car loans of many kinds are offered by Symbi Bank to its clients. You can select the offer that best meets your needs. The Indian Bank offers the following varieties of auto loans:

- i) New Automobile loan: This programme is for clients who want to purchase a brand-new vehicle. Depending on their loan amount, the consumer may qualify for a Symbi Bank car loan.
- ii) Used car loan: This option is available to customers who want to purchase a used car and offers a minimum duration of 5 years.
- iii)Loan against automobile: This option is available if you need money right away and can keep your car as a guarantee with the bank.
  - SYMBI banks' verification processes for auto loans are not too complicated. Customers must submit the following paperwork in order to apply for a loan: Income documentation in the form of last three months' worth of pay stubs, bank statements, or income tax returns filed within the last three years. Identity documentation in the form of a PAN card, voter's ID, driver's license, passport, Aadhaar card, or life insurance policy.

- SYMBI Banks will confirm the customer's income, although the method of verification may vary depending on the type of income. For instance, if a customer is salaried, or paid the same regardless of the number of hours worked, the bank may merely ask for recent pay stubs. They might ask for tax returns or bank statements as proof of income if it fluctuates from month to month due to commission or freelancing.
- Before closing on the loan, the bank would occasionally contact a customer's workplace to make sure they are still employed there.
- Based on the customer's income, the bank will set a maximum loan amount.
- Banks will also look into a customer's debt load and ability to handle it. To do this, they often look at the credit report, which should have a credit score. The customer will pay a lower interest rate and a smaller amount each month the higher their credit score is.
- A member of the team is dispatched to the borrower's residence to personally confirm the address.
- The bank will make sure that the customer is actually who they claim to be in order to prevent identity fraud and other sorts of fraud. The bank requests that customers produce an official photo ID when applying for a loan in order to do this.
- Given that the customer is using the car as collateral for the loan, the bank needs to be aware that it may be replaced in the event of an accident. It will inquire as to if and how much insurance the client has. One way to verify this is by calling the insurance company directly or using the customer's insurance card.

# Education Loan verification & authentication process by SYMBI Banks:

- The first step, just as with any other loan, is to fill out an application form, where the student must include both their academic information and personal contact information. Make sure the data you offer is true and sincere on this form.
- The student may be asked a number of questions about their academic standing, the institution they desire to attend, the course they choose, the potential application of their course choice, and other topics.
- Before the loan can be finalized, the student must provide the bank proof that their topchoice university has extended admissions offer.
- The bank can get in touch with the university to confirm the student's enrolment.
- The student will be required to submit collateral in the form of a third-party guarantee if the needed loan amount is up to Rs. 7,50,000. The student must submit collateral security equal to 100% of the loan amount and an assignment of their future earnings for the purpose of paying the instalments if the needed loan amount exceeds Rs. 7,50,000.
- In accordance with the procedure for repaying student loans, banks offer loans to applicants who are students; however, since the student cannot make payments until the course is completed, the bank considers the parent or guardian as a co-borrower. Additionally, the bank looks into the credit history of the co-borrower or borrower's guarantor before accepting the loan. The length of the course plus one year constitutes the bank's moratorium period, during which time borrowers are not obligated to pay back their interest-bearing student loans.

# Personal Loan verification & authentication process by SYMBI Banks:

- The bank must receive a fully completed application form from the customer before it may begin the verification process. This application form must be properly filled out and submitted by the customer together with two passport-sized pictures, KYC papers, proof of income, and employment.
- The bank will review the applicant's credit report after receiving the application. If the customer's credit score meets their requirements, they will dispatch a representative to their home to collect all the documentation needed to process the loan application.
- If the client is a salaried individual, the bank might require the following records: pay stubs from the previous six months; an IT Return from the previous two years; a bank account statement from the last three months that includes information about your pay, credits, and other income; and a statement of employment from your current employer.
- If the client is a self-employed individual, the bank may want the following records: IT returns for the last two years, financial statements including a balance sheet and a profit-and-loss statement, A bank account statement, for example, serves as evidence of ongoing business income. Evidence of commercial operations, such as GST registration.
- The bank's verification team, which will go to the address to make sure the person is actually residing there and will verify all the information they feel is crucial. Then, a different agent will pay a visit to the customer's office to see if you are employed there.
- Authorized portals will be used to verify the customer's PAN card, Aadhaar card, passport, and other identifying documents. The verification team will provide a positive report to the processing team if they are pleased with the results; otherwise, they will send a negative report, which will merely halt the process there.

### How bank ensures that customer data is protected:



#### 1. Multi Factor authentication-

Banks use more than one method for verifying a customer's identity before granting online account access. Forms of identification may include something you know (password or PIN) and something you have (ATM card, smart card). Banks also use authentication methods that you may not see, but that nonetheless assist them in knowing if you are who you say you are.

#### 2. Continuous Communication

Banks also communicate regularly with consumers on upgrades to systems, the introduction of new authentication procedures, etc., in addition to the periodic account statements that are generated and sent to customers. Customers can also set limits and alerts based on different conditions to ensure that they are informed if any unexpected activity takes place concerning their accounts. While there are multiple channels of communication available, the set-up is flexible to cater to customers' convenience.

#### 3. Data Encryption

Banks need to make certain that their systems use the highest encryption standards to protect their data. A properly developed banking app will ensure nobody will be able to see anything you're doing on the app even if they manage to somehow intercept your data. Banks should use the latest encryption technology—Transport Layer Security (TLS) with Advanced Encryption Standard 256 (AES256).

#### 4. Risk Assessment

Banks need to periodically assess the risk of their IT infrastructure. Information gathered during risk assessments can help analyze and evaluate the current level of protection for critical data as well as to detect weak spots and vulnerabilities for mitigation.

#### 5. Monitor and Analyze User Activity

Banks need to monitor user actions on their network. It plays an important role in detecting suspicious events and discerning early signs of an attack in progress. AI/ML can be used for user and entity behavior analytics.

#### 6. Maintain Data Integrity

Banks should enforce data-integrity checks at the machine-level, to make sure data isn't corrupted or altered in any way while in transit or when stored. Data has to remain secure, untampered with, and stored on multiple systems to avoid total loss even if there are outages and system failures. Technologies such as packet duplication, parity, checksums, asynchronous data replication, etc. will help to achieve data integrity.

#### 7. Manage 3rd party Risks

Financial institutions and banks need to closely monitor and manage 3rd party access to data. Their access to critical data should be limited. Also, banks need to ensure that 3rd parties comply with the same cybersecurity standards and regulations as the bank.

#### 8. Manage Access to Critical Assets

Banks and financial institutions should safeguard against malicious attacks by using firewalls to ensure only authorized applications can access critical assets. Technologies such as Intrusion Prevention Systems/Intrusion Detection Systems (IPS/IDS) need to be applied. Banks need to enforce multi-factor authentication. Measures should be taken to prevent Denial of Service (DoS) attacks so that a customer's access to their banking services is not interrupted.

#### 9. Establish a Cybersecurity Policy

Governments are very actively engaged in setting and implementing standards for security, which include things like PCI-DSS (the standard for the payment card industry), SOC2, ISO27001, ISO9001, ITIL, etc. all of which banks need to comply with to operate. Therefore, banks and financial institutions must implement a cybersecurity policy that contains all the requirements the bank should meet, all the practices they intend to implement, and all the tools that they intend to use for cybersecurity. Also, the policy must be periodically revised to keep its requirements and recommendations up to date.

#### 10. Privacy policies and training

All banks have stringent privacy policies. Employees are trained to treat your confidential information with the utmost care, meeting or exceeding federal and state mandates.

# There are also several methods implemented by the bank for word prevention:

- Banks typically use programs that monitor your account to help detect unusual activity.
   Customers, too, play an important role in protecting financial information. Here's what you can do to enhance your online security,
- Use a strong password. Experts advise using a combination of letters, numbers and characters, and caution you not to use easily guessed passwords, such as birthdays, children's names or home addresses. Change your password regularly and do not use the same password for multiple accounts.
- Keep it to yourself. Don't share your password or any personal information online with anyone.
- Avoid fraudulent Web sites. To help ensure the Web site you have visited is authentic
  and secure, when conducting financial transactions online look for a lock icon on the
  browser's status bar or a Web site URL that begins "https:" (the "s" stands for "secure").
- Protect yourself online. Don't click on pop-ups claiming that your computer is infected or offering discounts, as you may be installing malicious software ("malware") on your machine.
- Use anti spyware.Install and regularly update virus protection software that detects and blocks "spyware"—programs that can give criminals access to your computer.
- Be wary of e-mail. Do not share sensitive information via e-mail. If you receive an
  unscheduled or unsolicited e-mail claiming to be from your bank, proceed with caution.
  Close the email and log on to your bank's online banking yourself or check with your
  bank to make sure it's legitimate.
- Monitor your account. Check your online balances and paper statements frequently to spot any fraudulent activity—and report it immediately to your bank.
- Log off. Remember to sign off your bank's secured area when you have finished online banking. Also log off of your computer to prevent unauthorized access to your information and files.

Thus, banks work round the clock to ensure that they do everything that needs to be done to secure their data.

# AWS: The cloud service provider for SYMBI BANK

One of the most common questions we receive is if a particular AWS service is ready to be used with financial services like our SYMBI Bank. Our bank moving to the cloud is not a simple lift-and-shift procedure. Instead, our bank used a methodical service-by-service assessment procedure to demonstrate how cloud services could help them fulfil their regulatory obligations. Data migration efforts could be postponed if the service approval procedure is not properly set up.

SYMBI bank offers a framework made up of four crucial factors that financial institutions should pay attention to in order to speed up the acceptance of cloud services for their most sensitive data. The main AWS features that financial services businesses can use to their advantage during this procedure.

Here are the four key considerations:

- 1. Achieving compliance
- 2. Data protection
- 3. Automating audits with APIs
- 4. Operational access and security

#### 1. Achieving compliance

SYMBI Bank uses a service approval approach, the first stage is to confirm that the fundamental components of the CSP's services can fulfil basic compliance criteria. It is important to recognize that the AWS shared responsibility model is a key prerequisite for fostering their confidence. In order for an application to run securely on AWS, both the client and AWS, the CSP, must take certain precautions. Our customers are responsible for managing their own cloud security. The networks, systems, applications, and data are monitored and kept secure. AWS manages cloud security in addition to offering and maintaining functioning services and features, safeguarding AWS infrastructure and services, achieving operational excellence, and adhering to relevant legal and regulatory requirements.

To build trust in our side of the shared responsibility model, customers can often assess the System and Organization Controls 2 (SOC 2) Type II report produced by an objective, third-party auditor. Under the conditions of an AWS non-disclosure agreement, customers can receive the AWS SOC 2 report through AWS Artifact, a self-service website enabling on-demand access to AWS compliance data (NDA).

#### 2. Data protection

SYMBI Bank uses comprehensive data loss prevention strategies to protect sensitive data. Customers using our AWS data services have the option of using encryption to lower the risk of sensitive information being revealed, changed, or subjected to unauthorized access. By

regulating the lifespan of the encryption keys using the AWS Key Management Service, customers may control how their apps and AWS services use them (AWS KMS).

In order to produce and store keys with more flexibility, our customers may either import their own key material into AWS KMS and keep a copy in their on-premises HSM or it can create and store keys in particular instances of AWS Cloud HSM that it can control. For any of these key material creation and storage options, our customers may control all access permissions to use keys from any of its applications or AWS services. AWS CloudTrail additionally keeps track of each key usage and policy modification for auditing purposes. This level of control and audit over key management is one method firms may use to comply with regulatory obligations for using encryption as a data security approach.

#### 3. Automating audits with APIs

IT governance, security, and compliance all depend on having visibility into user actions and resource configuration changes. Installing agents, setting up configuration files and log servers, and creating and managing data stores are all necessary for on-premises logging solutions.

CloudTrail provides clients with a history of activity in their AWS accounts to aid them in conforming to internal policies and regulatory responsibilities. CloudTrail gives customers details like who or what did what action, what resources were used when the event occurred, and other parameters to help users analyse and respond to activities in their AWS accounts. The CloudTrail management events provide information on the management (control plane) operations made on the resources in an AWS account.

In order to facilitate ongoing compliance and audits, we offer the AWS Config service in a special method that enables clients to analyse, audit, and evaluate the configurations of our services. While continuously monitoring and recording AWS resource configurations, AWS Config enables users to automate the evaluation of recorded configurations against internal criteria. With AWS Config, customers may inspect relationships between AWS services, analyse configuration changes, and delve deeply into resource configuration histories.

# **Literature Review:**

Serial No.	Title of the Paper	Author	Year of Publish	Objective/Aim	Conclusion
1	Data Privacy and System Security for Banking and Financial Services Industry based on Cloud Computing Infrastructure	Abhishek Mahalle, Jianming Yong, Xiaohui Tao, Jun Shen	2018	For the banking and financial services industry, this article explains many aspects of cloud computing, such as data privacy and system security.	Cloud computing has reduced the cost of operating IT infrastructure by developing a dependable and secure architecture. However, using a cloud-based model carries long-term risks and threats of potential losses due to uncertain or unfavourable circumstances, which has a negative impact on profitability and reputation and invites harsh penalties from regulatory bodies for institutions like banks and financial services that handle customer and corporate financial information.
2	Privacy, Trust in Banks, and Use of Cash	Ivan Png and Charmaine Tan	2020	In this study, we perform an empirical investigation of two psychological factors that affect people's use of money but have received little attention in previous research. One is privacy. Bank customer confidence is the other component.	The government's strategy to encourage electronic payments may need to address fundamental concerns about privacy and confidence in financial institutions. Country-specific experiences may have an impact on policy choices, particularly if individuals have suffered as a result of massive data breaches, systemic banking crises, or financial scandals.
3	The General Data Protection Regulation in	Manuel Holler,Benjamin van Giffen,Seth	2020	This research project examines the General Data	There is a mismatch between strategy and implementation,

	Financial Services Industries: How Do Companies Approach the Implementation of the GDPR and What Can We Learn From Their Approaches?	Benzell and Matthias Ehrat		Protection Regulation in the financial services sector with the main question: "How do enterprises handle the General Data Protection Regulation and what can we learn from their approaches?" as its foundation.	despite the fact that corporations go to great lengths to ensure compliance with the General Data Protection Regulation.
4	Online Banking Security Measures and Data Protection	Shadi A. Aljawarneh	2017	This article discusses the problem of insider threats in the banking sector and presents important surveys and case studies that demonstrate how serious this danger is in this sector. The report also offers illustrations of specific regulations, tools, and methods that may be applied to stop and recognise insider threats to financial systems.	Banks should focus more on this risk and invest more funds in developing tools to mitigate it.
5	The Impact of the General Data Protection Regulation on the Financial Services' Industry of Small European States	Kieran Xuereb, Simon Grima, Frank Bezzina , Andre Farrugia, Pierpaolo Marano	2019	In this paper, we evaluate how the EU's General Data Protection Regulation (GDPR) would affect the financial services industry in Malta, Slovenia, Luxembourg, Lithuania, Latvia, Estonia, and Cyprus, which are all very small European States. just those EU countries with less than 3 million people.	Overall, participants thought that although while GDPR required more work and money, it improved the standardisation, confidence, and reputation of the organisations they represent. As a result, the data subjects may experience some consequences given that they are unfamiliar with the regulations and are afraid of the required consents.