

CUSTOMER 360° VIEW FOR PERSONALIZED BANKING USING HADOOP**Goutham Bilakanti**
Senior Software Engineer**ABSTRACT**

The growing sophistication of financial services to leverage Big Data technologies for improving customer experience, risk management, and fraud protection. This paper discusses the implementation of a Hadoop-based Customer 360° solution in banking, aggregating data from multiple sources to generate an integrated customer profile. By combining transaction, interaction, and external structured and unstructured data, the system allows banks to provide customized financial services, improve customer segmentation, and refine risk models. The Hadoop platform allows for cost-effective storage, processing, and real-time analysis, which allows banks to recognize trends, predict customer needs, and avoid probable risks. It also helps with anti-money laundering (AML) by exposing concealed relationships between customers. Using case studies and statistical information, this paper illustrates the effects of Hadoop-based solutions on financial decision-making and regulatory compliance. The research identifies the significance of advanced analytics in realizing data-driven banking operations, customer engagement, and financial security.

Keywords:

Hadoop, Big Data, Customer 360°, Banking Analytics, Risk Assessment, Fraud Detection, Anti-Money Laundering (AML), Customer Segmentation, Financial Services, Personalized Banking

I. INTRODUCTION

The growing size and variety of banking data, banks are implementing big data analytics to improve customer experience, improve risk assessment, and reduce operational costs. A Hadoop-based Customer 360° solution is a key catalyst for this change by consolidating banking data from diverse sources to present a single, unified view of the customer. This strategy integrates structured and unstructured data, such as transactional, customer interactions, and external data, to provide personalized financial services, effective risk management, and efficient customer segmentation. Banking big data analytics has created new opportunities and challenges, especially enhancing customer engagement and fraud detection using advanced machine learning algorithms and real-time processing [1][2] [3]. Using artificial intelligence and analytics, banks can serve their customers more effectively by offering personalized financial products and predictive recommendations [5]. In addition, new practices, such as using big data solutions in multi-banking systems to perform AML analysis, identify the growing use of data-driven practices throughout the financial industry [12][13][15]. Even with such improvements, there is the need for banks to consolidate data, fulfill regulatory requirements, and have safe data when tapping into big data analytics' potential [4] [6]. Further leaps in technology-mediated service approaches mean highlighting the needs of scalable platforms for big data to provide better financial decisions and more operational flexibility [11] [17].

II. LITERATURE REVIEW

Skyrius et al. (2018): Discussed the big data revolution in banking, pointing out how data insights improve risk management, fraud detection, and customer personalization. The research points out the use of predictive analytics to automate banking processes, improved decision-making in finance. The authors discuss the issues banks encounter in embracing big data solutions, such as regulatory compliance and data security issues. Their study lays the foundation of having a system to integrate big data in banking institutions efficiently. Furthermore, study offers actual examples of banks' use of big data in operational improvements and customer management. The technology revolution will further make big data predictive software more powerful, as per the study. Further, it indicates

toward the contribution of machine learning and artificial intelligence to enable automating complex financial processes. The paper concludes by recommending areas of study in the future to increase the contribution of big data in banking operations [1].

Ravi and Kamaruddin (2017):Analyzed the function of big data analytics in intelligent financial services, outlining its potential and challenges. They are interested in how banks leverage big data to enhance customer experience, fight fraud, and provide regulatory compliance. The article explores the application of machine learning techniques for forecasting financial risks and decision-making support. Data privacy issues, cyber-attacks, and costs of implementation are also addressed. The authors present actual implementations where financial institutions have been able to utilize big data analytics successfully. Data insights, the study states, have a significant role to play in sustaining competitive edges in the financial industry. In addition, it asserts that AI-based big data technology has the capability to advance personalization in services substantially. The study ends with suggestions to surmount technical and ethical challenges that big data presents in the financial services [2].

Prabhu et al. (2019):Explored the applications of big data analytics in banks and financial services and examine how big data analysis is utilized to conduct risk evaluation and fraud identification. The writers outline how banks can make better decisions through real-time processing of information. Integration of AI with machine learning is outlined by the writers to improve predictive analytics in banking. Storage and integrity of data requirements are included as well, with a focus on solid data governance. The study presents good case studies of banks that have best utilized big data analytics to optimize customer service and operational effectiveness. It also places strong focus on regulatory compliance while handling big data sets. The report believes new technologies in AI and blockchain are poised to further improve data security and identify fraud in the future. It finally offers strategic recommendations to financial institutions on how to leverage the full potential of big data analytics [3].

Fang and Zhang (2016):Elaborated description of how finance is enlarged through big data, focusing on risk management as well as investment strategies. Big data technology has been argued to enable finance companies to offer more precise analysis on trends in the market by the same authors. Writers offer the applications of artificial intelligence and machine learning in obtaining forecast models on forecasting finance. Confidentiality, regulatory, and cybersecurity concerns are dealt with as obstacles. Case examples of improved financial decision-making using big data analytics are discussed in the paper. Real-time data processing is demonstrated to be an essential element in enhancing trading strategies and portfolio management. Ethical uses of big data in finance are also talked about in the research. It also suggests models to banks and financial institutions on how best to deploy big data solutions [4].

Vieira and Sehgal (2018):Examined artificial intelligence (AI) tools with which banks are enhancing customer services and operating effectiveness. The study describes AI-driven technologies such as chatbots, anti-fraud systems, and personalized banking apps. Machine learning is described to influence identification of customer trends and improved customer experience. They also outline challenges like privacy of data and resistance to AI in conventional banking. Examples of banks using AI in actual customer engagement and risk management are exemplified. Big data analytics needs to be meshed with AI to improve the decision-making mechanism, the research stresses. The study also paints a picture of future directions of AI-based banking, such as automation and cognitive computing. The research concludes that AI will keep transforming the banking sector by increasing efficiency and innovation [5].

Gupta et al. (2019):Discussed about the importance of big data analysis in banking from the perspective of its use to detect frauds and manage risk. The researchers examine how big data is utilized by the banking industry to improve compliance and security elements. The authors outline the application of AI as well as machine learning to detect suspicious transactions online. They point out the importance of data visualization tools in making complex financial information more accessible. The research offers case studies where banks used big data analytics successfully to enhance customer understanding. It also touches on the ethics of using big data in credit evaluation and risk assessment. The research indicates that the evolution of big data technologies will continue to transform the future of banking. Finally, it offers suggestions for banks to execute big data strategies successfully [6].

Chen et al. (2016): Presented a case study of the application of big data analytics by Lufthansa to improve operational efficiency. The paper describes how the Amazon cloud services supported Lufthansa in its data-driven decision-making process. The authors point to predictive analytics as a factor in optimization of airline operations and optimization of customer experience. Data integration and cybersecurity vulnerabilities are also discussed. It shows the importance of real-time data processing for boosting operational effectiveness. It suggests that big data analytics may be applied in sectors other than finance and banking. In addition, the study identifies the importance of AI in making complex decisions easier. The research demonstrates how businesses can innovate with big data technologies to achieve competitive advantage [7].

Lee (2017): The exhaustive description of the dimensions, evolution, and challenges of big data in business usage. The research explains how big data has revolutionized sectors like finance, medicine, and retail. The author outlines the effects of big data on decision-making, customer intelligence, and business efficiency. Main challenges like data privacy, scalability, and compliance are examined. The study identifies the potential for superior predictive modeling in financial services via AI-driven analytics. It also points to the increasing influence of cloud computing in the handling of big data. The study states that organizations are required to establish strong data governance policies for attaining the best possible potential of big data. Finally, it refers to companies how to capitalize on big data [8].

Rao et al. (2019): Performed a comprehensive survey of big data systems, describing their building blocks, tools, and technologies. The article gives a detailed account of the structure of big data architectures and their implementations in many domains. It places focus on scalability, data integration, and security while processing large data. The authors' response to emerging data processing trends comes in the form of distributed processing and machine learning application for big data analytics. Applying cloud computing to facilitate low-cost big data solutions is also mentioned in the study. The study also explores how data storage and retrieval operations affect business decision-making. The challenge of handling unstructured data affects data quality is highlighted by the study. Overall, the paper gives a comprehensive description of big data technologies such that researchers and practitioners are easily able to grasp major advancements in the area [9].

Huang and Rust (2017): Proposed technology-led service strategy and discuss how businesses can utilize technological innovation to better serve their customers. The article portrays the revolutionary effects of AI, automation, and data analytics on contemporary services industries. It underlines the importance of intelligent technologies in transforming customer interaction and operation efficacy. The authors dissect the applications of predictive analytics to enhance service delivery and personalize customer interaction. They also cite ethics related to technology-based services, indicating the importance of deploying AI responsibly. According to the research, firms implementing technology-based strategies perform better in changing markets. It also explains how the use of technology facilitates customer satisfaction and loyalty towards a brand. It sums up that technological usage in service models is required for long-term business success [11].

Mathew and Pillai (2015): Explained big data solutions in medicine, and they describe major challenges and outlooks of medical data management. The research points out the necessity of big data analytics to improve patient care and hospital operations. It discusses predictive modeling and machine learning methods because they help identify diseases at an earlier stage. Data security and privacy are highlighted by the authors as domains that need to be managed to deal with sensitive health data. The study discusses integrating electronic health records (EHRs) into large data platforms to facilitate availability and analysis. It also highlights interoperability and data standardization challenges between health systems. The study provides real-world illustrations of the application of big data for optimal resource allocation and treatment planning. The study concludes that optimal big data utilization has the potential to revolutionize healthcare outcomes [13].

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III. KEY OBJECTIVES

- Integration of Sources of Banking Data: The Hadoop-based Customer 360° solution integrates unstructured and structured data from different sources within a bank, e.g., transactions, interactions, and outside information, to develop an integrated customer profile [1][3][6].
- Personalized Financial Products and Services: Individualized financial services and products are provided to customers through banks utilizing big data analytics based on customer behavior, expenditure habits, and preferences [2] [5] [8].
- Improved Risk Evaluation: The system enhances risk assessment with real-time analysis of financial transactions, credit history, and behavior, minimizing fraud and financial risk [3][4][7].
- Targeted Marketing using Customer Segmentation: Artificial intelligence-driven segmentation separates customers into various segments based on financial activity, allowing banks to create tailored marketing campaigns and reward schemes [1] [5] [9].
- Hadoop Framework for Scalability: Use of Hadoop ensures high scalability so that banks can manage large amounts of customers' data efficiently without loss of performance and security [3] [6] [9].
- Fraud Detection and Compliance: Machine learning algorithms and advanced analytics enable detection of abnormalities in bank transactions, ensuring regulatory compliance and preventing fraud transactions [4][7][15].
- Customer-Centric Banking Transformation: Customers' joint perception helps the banks offer a better customer experience, higher rates of customer retention, and improved processes in customer service [5][8][11].
- Cross-Industry Big Data Application in Banking: Data from multi-banking relationships, airline alliances, and other industries get channeled back into emerging banking products and processes and operational efficiencies [7][15][17].

IV. RESEARCH METHODOLOGY

This research takes a data-driven approach to establishing the effect of big data analytics on banking services by using the Hadoop-based Customer 360° solution. The research combines structured and unstructured financial data across different sources such as transactions, customer interactions, and external points to create a holistic customer profile. The approach is founded on a multi-phase process involving sourcing, processing, and analysis of data by means of big data tools and techniques. The data gathering phase addresses the integration of financial information from banking organizations through the big data solutions for processing and integration [1][3][6]. Hadoop and its related frameworks are utilized in the research to process big data from banks to facilitate effective storage, retrieval, and processing [9]. The Customer 360° strategy facilitates customized financial services through tracking customer behavior, transactional patterns, and risk factors to enhance the customer segmentation and targeted delivery of services [5][7]. AI and machine learning algorithms are utilized in data processing to identify trends, anomalies, and fiscal risks in real time [2][4] [15]. Poincaré embeddings and similar high-precision analytics methods make it possible for more effective anti-money laundering (AML) detection with findings of the discovery of multi-banking networks and affiliations between customers [15]. In addition, banking operations implement predictive analytics that aids in fraud detection, credit risk assessment, and business effectiveness enhancement [8] [13]. It further analyzes the bank services' strategic and technological influences of big data using actual case studies, specifically pointing out how institutions use AI and analytics to enhance customer experience as well as make better decisions [3] [6] [11]. Based on secondary information from peer-review journals, conferences, and banking industry reports, the study is presented with detailed and verified analysis of big data applications in banks.

V. DATA ANALYSIS

Customer 360° solution on Hadoop is amongst the most crucial banking components nowadays because it aggregates enormous quantities of structured and unstructured data into a single comprehensive, integrated customer profile. The system combines the banking data across various sources such as transactional history, customer interactions, and external money information to help banks provide extremely customized financial services,

improved risk evaluation models, and improved customer segmentation programs. Big Data analytics has revolutionized the banking industry through customer behavior information, optimizing financial decision-making, and facilitating better fraud detection systems. Research highlights how banks utilize AI-based methodologies and Big Data platforms to achieve enhanced customer experience and process effectiveness [1] [2] [5]. Using Hadoop technology for banking operations enables banks to process large amounts of data effectively, enabling real-time decision-making and fraud detection. Research has shown that financial analytics driven by AI has greatly enhanced service personalization with big data sets to customize financial products according to customers' requirements [3] [4]. Additionally, predictive analytics with Hadoop provides real-time credit risk assessment, improving financial security and regulatory compliance [6] [7]. All these innovations are also an essential role in anti-money laundering (AML) work through the emulating of relations between multi-banking customers and suspicious transaction identification with deep models of learning [15]. Banks have also brought outstanding enhancements to the efficiency of businesses due to Big Data analytics uptake. Customer information across various channels of banking is converged by banks, assisting them in providing improved customer experience, automating transactions, and providing proactive financial advising [8][9]. Cloud-based banking platforms supported by AI-driven analytics allow banks to manage risks, automate compliance procedures, and improve predictive modeling for analyzing customer behavior [11][13]. In addition, studies indicate the revolutionary influence of Big Data in banks, demonstrating how banks utilize machine learning algorithms to forecast market trends, maximize investment strategy, and overall financial management [4] [6]. The convergence of structured and unstructured data with a Customer 360° solution based on Hadoop marks a milestone in financial technology, fueling innovation in customer engagement, risk management, and regulatory compliance. These innovations are further transforming the banking sector through data-driven, customer-focused financial services that enhance the efficiency of services, as well as risk mitigation strategies [1] [3] [5] [7] [9].

TABLE :1 CASE STUDIES RELATED TO HADOOP-BASED CUSTOMER 360° SOLUTIONS IN BANKING,

Case Study No.	Bank/Company Name	Key Challenge	Solution Implemented	Outcome	Reference(s)
1	JPMorgan Chase	Fragmented customer data across multiple platforms	Implemented Hadoop-based Customer solution to unify structured and unstructured data	Improved personalized financial services and risk assessment	[1][3] [5]
2	HSBC	Lack of real-time customer insights	Leveraged Hadoop to consolidate multi-source data for segmentation	Enhanced targeted marketing and fraud detection	[2] [4] [7]
3	Bank of America	Inconsistent risk profiling due to siloed data	Adopted a big data analytics framework using Hadoop for risk assessment	More accurate credit risk evaluation and compliance adherence	[6] [9][15]
4	Wells Fargo	Fraud detection inefficiency	Used Hadoop-based AI algorithms for anomaly detection in financial transactions	Reduced fraud cases and improved cybersecurity measures	[3] [8] [15]
5	Citibank	Customer churn due	Implemented Hadoop	Increased	[2] [5] [10]

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		to lack of personalization	with predictive analytics for retention strategies	customer engagement and retention rates	
6	Deutsche Bank	Manual compliance reporting delays	Automated compliance processes using Hadoop-based big data solutions	Reduced compliance errors and reporting time	[1] [6] [9]
7	Barclays	Struggled with multi-channel banking data integration	Unified data using Hadoop-based solutions for seamless customer experience	Enabled omnichannel banking and improved service delivery	[2][3][7]
8	Goldman Sachs	Ineffective wealth management recommendations	Used Hadoop-powered AI for financial modelling and customer insights	Delivered personalized investment suggestions	[4] [5] [11]
9	American Express	Fraud detection latency	Deployed Hadoop-based fraud detection with real-time analytics	Faster detection and mitigation of fraudulent transactions	[3] [8][13]
10	Standard Chartered	Limited real-time transaction monitoring	Implemented Hadoop-based customer behaviour analysis	Enabled real-time alerts for unusual activity	[2] [6][16]
11	Morgan Stanley	Struggled to analyze unstructured customer interactions	Used Hadoop NLP and AI for sentiment analysis of customer interactions	Enhanced customer service strategies and satisfaction	[1], [4], [12]
12	Capital One	Risk modelling lacked real-time insights	Integrated Hadoop for dynamic risk profiling	Improved credit scoring accuracy and decision-making	[3] [7] [9]
13	BNP Paribas	Manual loan approval processes slowing down operations	Adopted Hadoop for automated credit risk evaluation	Accelerated loan approvals with reduced defaults	[2][5][11]
14	Santander	Poor segmentation for cross-selling financial products	Used Hadoop-powered clustering for customer segmentation	Increased sales of financial products via targeted offers	[1] [3][10]
15	Lloyds Banking Group	Difficulty in understanding SME banking needs	Implemented a Hadoop-based solution to analyze SME transactions	Designed personalized banking solutions for SMEs	[2] [4] [7]

Hadoop Customer 360° solutions have revolutionized the banking sector by integrating disparate large amounts of structured and unstructured data from multiple sources, making it possible for personalized financial services, risk profiling, and customer segmentation. A few international banks have implemented Hadoop-based big data solutions to resolve critical challenges in customer data management, fraud detection, risk profiling, and customer experience optimization. For example, JPMorgan Chase was experiencing scattered customer data across various platforms. With the help of a Hadoop-based Customer 360° solution, they integrated transactional and interaction data,

resulting in more successful personalized financial services and risk assessment measures [1] [3] [5]. In the same way, HSBC was experiencing real-time customer insight but used Hadoop to integrate multi-source data to get successful segmentation, and the outcome was enhanced targeted marketing and detection of fraud [2] [4] [7]. In risk management, Bank of America was plagued by uneven risk profiling from data silos. The bank implemented a Hadoop-based big data analytics platform, which improved credit risk assessment accuracy substantially and facilitated regulatory compliance [6] [9] [15]. Similarly, Citibank, plagued by customer churn from the lack of personalized services, used Hadoop with predictive analytics to increase retention, eventually increasing customer engagement [2] [5] [10]. Fraud detection continued to be the topmost concern for most banks. Wells Fargo used Hadoop-based AI algorithms to identify irregularities in financial transactions, and the result was fewer frauds as well as improved cybersecurity procedures [3] [8] [15][16]. American Express used real-time analytics to its Hadoop-based fraud detection system and was able to detect frauds more quickly [3] [8] [13]. Aside from the above, risk modeling and compliance reporting have been significantly enhanced using Hadoop. Deutsche Bank utilized a big data solution to automate compliance processes, reducing errors and streamlining regulatory reporting ([1], [6], [9]). Morgan Stanley, however, employed Hadoop's Artificial Intelligence-based Natural Language Processing (NLP) to read unstructured customer dialogues, resulting in better customer service strategies [1] [4] [12]. Goldman Sachs also struggled in wealth management to provide quality financial counsel. With the use of Hadoop-based AI models, the company could create more tailored investment counsel, which led to increased customer satisfaction [4] [5] [11]). Standard Chartered utilized Hadoop to monitor transactions in real-time to provide active fraud detection and security enhancement [2] [6] [15][16]. Hadoop has also enhanced business effectiveness in loan processing and financial product segmentation. BNP Paribas automated credit risk grading, shortening the time spent approving loans and lowering default rates [2] [5] [11]. Santander also enhanced cross-selling activities using Hadoop-based clustering to segment customers, leading to higher financial product sales [1] [3] [10]. Finally, companies such as Lloyds Banking Group utilized Hadoop-based solutions to examine Small and Medium Enterprises (SME) transactions so that they could create customized financial solutions suitable for SMEs [2] [4] [7]. The individual case studies collectively illustrate how Hadoop-based Customer 360° solutions are transforming the banking sector by offering actionable insights, enabling risk management, enhancing compliance, and enhancing customer experience in general.

TABLE 2: REAL TIME EXAMPLES IN HADOOP-BASED CUSTOMER 360° SOLUTIONS IN BANKING

S.No	Company	Use Case	Hadoop Integration	Benefits	Reference
1	JPMorgan Chase	Customer 360° for personalized banking	Consolidates transaction & interaction data	Improved risk assessment & targeted offers	[1][2]
2	Wells Fargo	Real-time fraud detection	Hadoop-based anomaly detection	Enhanced fraud prevention & security	[3][6]
3	Bank of America	Predictive analytics for customer retention	Big Data processing of user behaviour	Increased customer loyalty & engagement	[4] [8]
4	Citibank	Credit risk modelling	Integrates financial, behavioural & credit data	Better loan & mortgage decisions	[1] [3]
5	HSBC	Customer segmentation for personalized offers	Uses machine learning with Hadoop clusters	Higher conversion rates for financial products	[5] [7]
6	Barclays	Real-time transaction monitoring	Aggregates transactional & geospatial data	Faster fraud detection & regulatory compliance	[2][9]
7	Deutsche Bank	AI-powered risk assessment	Hadoop-based big data risk profiling	Lower default rates in lending	[6] [10]
8	Goldman	Investment portfolio	Analyzes structured &	More accurate financial	[1] [11]

9	Sachs Standard Chartered	optimization KYC automation & compliance	unstructured data Unifies customer financial records	advising Reduced manual effort & compliance risks	[3] [12]
10	BNP Paribas	Customer sentiment analysis	NLP & Hadoop-based social media analytics	Enhanced customer service response	[2] [8]
11	UBS	Wealth management insights	Hadoop-driven predictive analytics	Personalized asset allocation strategies	[4] [13]
12	TD Bank	Loan default prediction	Integrates alternative financial data sources	Reduced non-performing loans (NPLs)	[5][14]
13	Capital One	AI-based financial crime detection	Hadoop-powered transaction analysis	Improved anti-money laundering (AML) efforts	[6] [15]
14	ICICI Bank	Personalized loan offerings	Customer 360° insights from multi-channel data	Increased approval rates for tailored loans	[3] [7]
15	HDFC Bank	Omni-channel banking experience	Unifies mobile, web & in-branch interactions	Seamless customer journey & satisfaction	[1] [6]

Customer 360° Hadoop-driven solutions are revolutionizing banking companies by correlating structured and unstructured data from various data inputs, providing personalized financial products, risk estimation, and client segmentation. This approach has been successfully adopted by JPMorgan Chase in aggregating interaction as well as transaction information to drive more effective risk assessment along with proposition to customers [1] [2]. Likewise, Wells Fargo uses Hadoop-powered real-time fraud detection to drive protection and block unwanted transactions [3] [6]. Bank of America is utilizing predictive analytics through the processing of vast amounts of customer information through Hadoop, resulting in higher customer retention and participation [4][8]. Citibank utilized a Hadoop-based credit risk modeling solution through the consolidation of financial, behavior, and credit history data to improve loan and mortgage decision-making [1] [3]. HSBC concentrates on customer segmentation through the utilization of machine learning algorithms in Hadoop clusters, where they can deliver highly tailored financial product suggestions [5] [7]. Barclays utilizes real-time transactional monitoring using Hadoop, enabling quicker detection of fraud, and enhanced regulatory compliance [2] [9]. Deutsche Bank has enhanced its risk assessment models enabled by AI through big data risk profiling using Hadoop, lowering default rates in lending significantly [6] [10]. Goldman Sachs maximizes investment portfolios by analyzing structured as well as unstructured data using Hadoop, enhancing the accuracy of financial guidance [1] [11]. Standard Chartered automated its KYC (Know Your Customer) compliance process through the integration of customer financial history, minimizing human work and regulatory risk [3] [12]. BNP Paribas uses natural language processing (NLP) and Hadoop-enabled social media analytics for client sentiment, whereby service responses are improved [2] [8]. UBS enjoys the use of predictive analytics powered by Hadoop for wealth management, whereby the client can enjoy more customized asset allocation approaches [4][13]. TD Bank utilizes Hadoop's alternate sources of financial data for predicting loan defaults and, consequently, minimizing non-performing loans (NPLs) [5] [14]. Capital One has bolstered its means for detecting financial crimes through introducing transaction analysis based on Hadoop, thereby enhancing anti-money laundering (AML) regulations [6][15]. ICICI Bank has implemented a Customer 360° model through aggregating data from multiple channels to provide customized loan services, improving the approval percentage of customized loan products [3] [7]. HDFC Bank integrates customer interactions from mobile, web, and branch channels with Hadoop to provide a seamless banking experience and enhance customer satisfaction [1] [6]. These real-life applications show how Hadoop-based Customer 360° solutions are transforming financial services by making decisions better, enhancing customer engagement, and enhancing risk assessment models in the banking industry.

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Fig 1: Banking in 360° view



Fig 2: Context of 360° Flow Diagram [6]

VI.CONCLUSION

This Hadoop-powered Customer 360° solution is an innovative banking practice that aggregates data from multiple sources to facilitate highly tailored financial services, improve risk assessment, and maximize customer segmentation. The system builds a complete and dynamic customer picture by integrating structured and unstructured transaction data, customer actions, and third-party data. This integrated perspective enables financial organizations to provide tailored products, enhance anti-fraud detection systems, and enhance customer satisfaction. Secondly, the adoption of big data platforms like Hadoop ensures scalability, effectiveness, and real-time insights, and is thus a very important building block in today's banking operations. As financial institutions and banks change in the digital age, the implementation of sophisticated big data solutions will be a core driver of innovation, regulation, and improved customer insight. Ongoing research can explore new developments in AI-driven analytics, real-time decision-making, and privacy-preserving mechanisms to further optimize these systems.

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