THE USE OF ARTIFICIAL INTELLIGENCE IN THE BANKING SECTOR, REFERRING TO THE CASE OF THE UNITED ARAB EMIRATES

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Abstract

The use of artificial intelligence (AI) has spread in many countries and in various fields, The recent study aimed to show the role of using the artificial intelligence in banking sector in the United Arab Emirates that is considered as one of the leading countries in using it in its banking sector. Through the banking data of Uae Banking sector, the study concluded that the banking sector in the UAE planned the National Strategy for Artificial Intelligence 2031 that aimed to contribute to asset management, risk management, variouscustomer-oriented services, and data processing to predict and anticipate the future of the economy and the banking industry.

Key Words: Banking sector, Algorithms, Artificial Intelligence, UAE National Strategy for Artificial Intelligence 2031.

JEL Classification: E0; E5; G2; O3

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Introduction

Information technologies have spread all over the world, which has led to the wide use of these techniques in all sectors around the world. The digital economy is the product of this development and relies on technology, skills, and scientific knowledge that aim at optimal use of resources in order to achieve effective results and added value.

Financial institutions have a strategic role in the financial system of any country. Banking and financial institutions receive deposits, give loans for investment, and so on. Banks operate in a changing environment that requires achieving a competitive advantage.

UAE banking sector plays its role in supporting the national economy not only by financing the various economic sectors but also by serving the society. International reports confirm that the UAE tops the list of countries enjoying political stability, stable financial and monetary system, and fully integrated and advanced and legal frameworks.

The covid-19 pandemic brought a dramatic change to almost every industry, including financial services, which created an opportunity for financial institutions to innovate by shifting to automated-driven financial services to help improving the customer experiences.subsequently, financial services providers started to employ Artificial Intelligence (AI) to deliver innovative financial services as automating repetitive front-office services and answering customer queries more efficiently and in detecting fraud.

Artificial Intelligence has become a significant factor in achieving a competitive advantage in banking transactions and improving the relationship with clients. In fact, McKinsey reported that AI could deliver $1 trillion of additional value to the banking industry each year. (company, 2020)

According to the Oxford Insights and the International Development Research Center report 'Government AI Readiness Index 2022', which included 181 countries, the report provided an indicator of the readiness of the governments of the countries of the world to implement artificial intelligence techology, including that the Arab Emirates is the 16th internationally and the first in the Arab world.

Depending on the previous introduction the following problem can be asked :

What is the role of using Artificial intelligence in the banking sector of UAE ? What are the prospects for that in the National Strategy for Artificial intelligence 2031 ?

-Importance of the Study : The importance of this study lies in shedding light on the benifits of applying artificial intelligence in the field of banking and financial transactions and highlighting the implimentation of Artificial Intelligence in UAE banking industry.

-Study Objectives : this study aims to achieve the following objectives **:**
- Demonstrating the importance of the banking sector in achieving economic development, especially through financing various investment projects.
-The widespread use of communication and digitization tools to manage the affairs of various institutions.
- Explain the importance of relying on artificial intelligence in facilitating banking transactions.
- Due to the widespread use of artificial intelligence in varios areas of life, it has become necessary for the banking sector, like other sectors, to use these technologies and means in order to preserve its rights and ensure services that meet the expectations of clients.

-Study Methodology : this study relies on the descriptive approach which includes a desk survey in addition to using analytical method by collecting statical information about banks in the UAE.

-Previous Studies :

- Shelagh Heffernan (2005) book entitled ''Modern Banking''

This book incudes many axes, starting with presenting the theoretical frameworks of the bank and its various activities, in addition to the risk management process in banks. It also included the global regulation of banks, as well as the regulation of banks in UK, USA, Japan, EU. The

writer also touched on the role of banks as a tool for financing the emerging economies and Islamic banking, financial crises and competitive issues in banking. (heffernan, 2005)

Although the writer dealt with the strategic role of banks, he also touched on the failure of banks to perform their duties by presenting sven reasons. He also presented quantative models for the failure of some banks to conduct their activities.

This book contributed to directing this reseach to take advantage of the various reasons that contribute to the failure of banks (such as Poor management of assets, fraud, the role of regulators) to focus on them in the search for success factors of artificial intelligence so that banks can perform their tasks in the best and safe ways.

- Blockchain Technology Application in the UAE Banking Industry : (hajer & khelil, 2022)

This study contributed in the analysis of the impact and the opportunities available from the application of 'UAE Blockchain Strategy 2021'' in 2018 the UAE seek to be the first goverment in the world to operate this technology. The study found that the adoption of blockchain in the UAE banking system helped to uncover an estimated 3.75 million fraudulent transactions in the UAE annually, representing 435 million USD in potential losses and it expected that KYC blockchain platform will support the asset quality of UAE banks primarily by reducing operational risk.

-UAE National Strategy for Artificial Intelligence 2031 (Office, 2018)**:** This report includes the main aspects of how the UAE will build an AI economy and the vision to become one of the leading nations in AI by 2031 in alignment with the UAE Centennial 2071, creating new economic, educational, and social opportunities for citizens, goverments and businesses and generating up to AED 335 billion in extra growth.

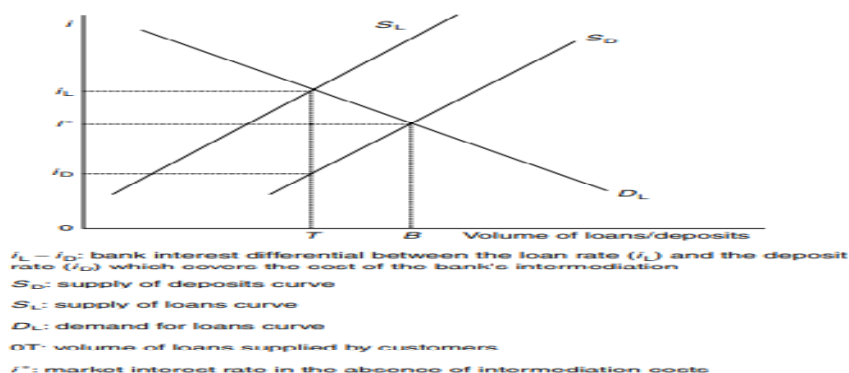**1- An Overview about Banking and Artificial Intelligence**

1-1-   Bank Definition : different authors and economists have given structural and functional definitions on bank from different angles :

-    A Bank is an institution that accepts depsits of money from the public withdrawal by cheque and used for lending banks are said to be department stores of financial services to their customers. **(**Upadhyaya**,** w/d)
-    The primary role of the bank is to take in funds-called deposits- from those with money, pool them, and lend them to those who need funds ; banks are intermediaries between desitors (who lend money to the bank) and borroxers (to whom the bank lends money. The amount banks pay for desposits and the income they receive on their loans are both called interest. **(Gobat, 2012)**

So, a bank is a financial institution which plays an important role in matching up creditors and borrowers, by which several social and economic activities can be done in a country. The central bank regulates the commercial banks activities in most countries. There are two kinds of banks :

- Commercial and retail banks
- Investment banks

Figure (01) : The Banking institutions.

$i_L - i_D$: bank interest differential between the loan rate (i_L) and the deposit rate (i_D) which covers the cost of the bank's intermediation
S_D: supply of deposits curve
S_L: supply of loans curve
D_L: demand for loans curve
OT: volume of loans supplied by customers
i^*: market interest rate in the absence of intermediation costs

Source : (Heffernan, 2005)

The horizontal axis contains the volume deposits/loans. We assume that the interest rate is given ; in this case the bank faces an upward-sloping supply of deposits cuvre (SD). There is also the bank's supply of loans cuvre (SL) showing that the bank will offer more loans as interest rates rise.

In the previous figure DL means demand for loans, which falls as interest rates increase. i* is the market clearing interest rate, that is the interest rate that would prevail in a perfectly competitive market with no intermediation costs associated with bringing borrower and lender together. Hte volume of business is shown as 0B. However, there are intermadiation costs, including search verification, monitoring and enforcement costs, incurred by banks looking to establish the creditworthiness of potential borrowers.the lender has to estimate the riskiness of borrwer and charge a premium plus the cost of the risk assessment. The interest margin is equal to iL= iD and covers the institution's intermediation costs, the cost of capital, the risk premuim charged on loans, tax payments and the institution's profits.

1-2- Objectives of Bank : tha are many, some of them are
- Encouraging people to save money in banks.
- To collect savings or idle money from public at a low rate of interests and lend these public money at a higher rate of interests.
- To maintain economic stability by means of controlling money market.
-To assist the government for trade and tourisme and socio-economic development.
- The central bank maintains and controls exchange rates.
- The central bank is responsible for issuing money.
- The role of banks in financing the various projects can not be denied, whether in traditional or circular economy, thus achieving many social and economic benefits.(عدنان و فوزي، 2022)

1-3- Artificial Intelligence Definition : it is also called machine intelligence
- A term coined by emeritus Stanford professor jhon McCarthy in 1955, was defined by him as 'the science and engineering of making intelligent machines' (manning, 2020)
- It is defined by the european Commission's 2018 as the systems that display inteeligent behaviour by analysing their environment and taking action –with some degree of autono,y- to achieve specific goals.' (Boucher**, 2020)**
- It is a method in the computer science it is used to teach computers to analyze information and simulate human communication.(بن بردي و عزيزي، 2023)
- According to Howie Baum it is intelligence demonstrated by machies, in the contrast to the natural intelligence display by humans and other animals, such as learning and problem solving. (BAUM, w/o date).

Artificial intelligence can be considered as a competitive intelligence because it also contributes to the analysis of information related to competitors, customers ; markets and the overall activity environment.(صديقي و حمو، 2022)

So, AI a system which uses applications and technologies, to perform many tasks to facilitate our daily lives, learning and work.

1-4-The Benefts of Artificial Intelligence in Banking :
The use of Artificial intelligence tools helps banking institutions achieving leadership in the banking industry, here are some benefits of its uses :
- **Reduction in Operational Costs and Risk :**
Banking activities depend on many digital operations, but in the same time using a huge amount of papers and a number of workers and machines to finish the work led toa rethinking of finding solutions to reducing costs and time, as well as reducing the error rate that is done by human resources working in the banking sector.

Robotic Process Automation (RPA), expresses the application of artificial intellegence to compensate for the tasks which performed by the bank workers, which may require a long time and

may include many errors related to the bank customers, contacts and details of various financial transactions.

- **Improved customer Experience :**

Bank customers are always unable to benefit from various services as laterin the day or weekends and holidays, that is why artificial intelligence came to change this stiuation.

- **Sentimental Analysis** :

The bahavioral predictions of the customers is the core concern of any financial institution to develop and offer financial products and or services. The sentiment analysis technology of AI predicts the preferences of the customers. This technology collects information to develop and display the contents of the users given their preferences and choices. (Umara, Attayah, Zaheer, & Muhammad, 2023)

- **Using Chatbots on call :**

The use of AI tools will overcome the previous obstacles. Relying on chatbots on demend will result in many benefits for the bank's clients. This type of robots provides services 24/24 and days a week. Thus, the bank achieves the satisfaction of its customers by receiving certain services such as answering questions or some standard banking tasks, which is difficult to obtain on an ongoing basis by bank workers.

With the help of natural language processing technology and machine learning (ML) algorithms, chatbots can also offer personalized suggestions to different types of customers. For example, chatbots can separately notify business customers about loan or merchant banking services. (ibsintelligence, 2021)

- **Upselling :**

AI banking services enable to retain existing customers as well as attract new customers, providing various explanations and information can contribute to solve payment or credit problems, whether by providing the right offers at the right time or through predictive analytics of artificial intelligence tools, which inevitably leads to an increase in banks' incomes from banking services provided through AI tools.

- **Robo Advice :**

Automated advice is one of the most controversial topics in the financial services space. A robo-advisor attempts to understand a customer's financial health by analyzing data shared by them, as well as their financial history. Based on this analysis and goals set by the client, the robo-advisor will be able to give appropriate investment recommendations in a particular product class, even as specific as a specific product or equity. (ibsintelligence, 2021)

- **Improved Fraud Detection and Regulatory Compliance :**

The banking sector is one of the most important economic sectors that rely on regulation to perform its various tasks and provide its services , so AI helps in detecting fraud and achieving banking regulatory compliance with various regulations (Knowing bank clients, supporting their privacy, monitoring transfers and preventing money laundering) through various algorithms which must be well prgrammed to detect and predict fraud and apply banking regulatory compliance regulations, which guarantees the ban kits rights and preserves the rights of its clients.

- **Improved loan and credit Decisioning :**

Banks rely on a set of systems that in turn use AI and machine learning algorithms to make decisions related to loans and credit, and predict that the customer will adhere to the credit history and obtain creditworthiness or not, as humans are usually tainted by bias in some transactions, so the use of AI may elilinate such behaviors that harm banking transactions.

- **Cybersecurity :**

AI can significantly improve the effectiveness of cybersecurity systems by leveraging data from previous threats and learning the patterns and indicators that might seem unrelated to predict and prevent attacks. In addition to preventing external threats, AI can also monitor internal threats

or breaches and suggest corrective actions, resulting in the prevention of data theft or abuse. (company, 2020)

- **Credit Scoring / Direct Lending :**

AI is instrumental in helping alternate lenders determine the creditworthiness of clients by analyzing data from a wide range of traditional and non-traditional data sources. This helps lenders develop innovative lending systems backed by a robust credit scoring model, even for those individuals or entities with limited credit history. (ibsintelligence, 2021).

- **Portfolio Management**

Advances in AI technology are creating machines as intelligent as the human brain. Machine learning algorithms track all user's activities, also studying the various factors that cause movements in the financial markets. Tracking market tendency and trading. AI enables banks to process large chunks of data and predict market trends, stocks and currencies. Advanced machine learning techniques help to evaluate market sentiments and suggest investment options. (company, 2020).

Figure (02) : How banks are extending their use of AI
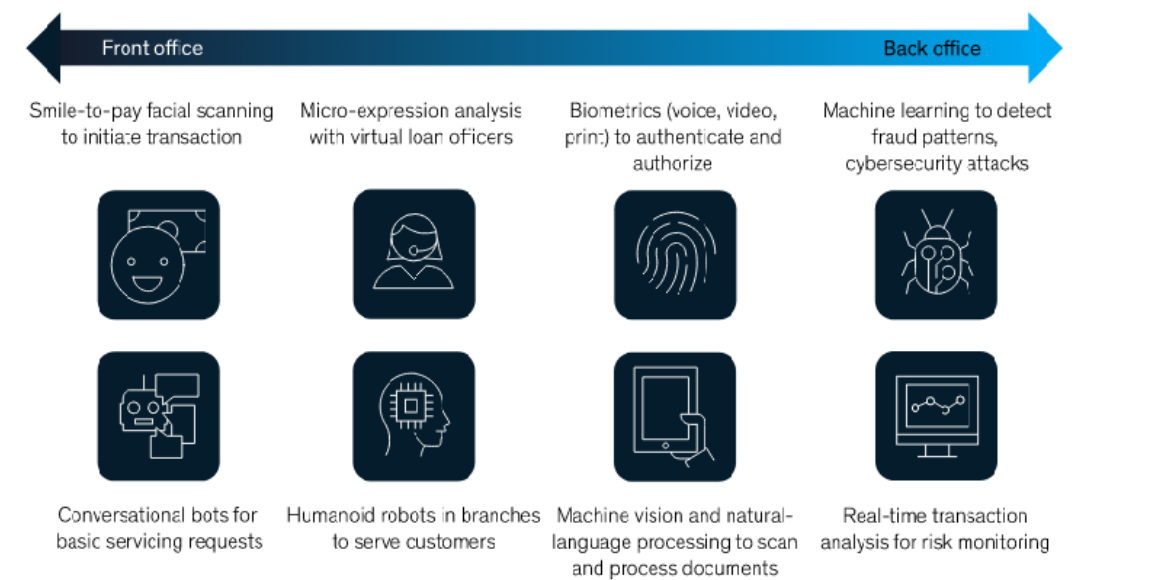
Source : (mckinsey, 2020)

Through the above figure, it can be said that some banks use artificial intelligence in their transactions by relying on a set of activities, including several pre-applications and instructions, in order to obtain information related to the customer to be used in protecting his rights and the rights of the bank from fraud, including Request a face scan to start the transaction (smile to pay facial scaning to initiate transaction) and the biometric activities as (voice, video, print) to authenticate and authenticate and authorize. The bank not only uses the machine vision and the natural language processing to scan and process documents but also machine learning to detect fraud patterns, cybersecurity attacks

1-5-Challenges Faced

The financial services industry has seen a surge in artificial intelligence (AI) investments, which has raised new concerns about data security and transparency. As data management techniques change in response to the introduction of new AI solutions, these and other difficulties of AI in financial services are especially crucial to overcome. Organizations need to be aware of the upcoming difficulties listed below and implement safety measures to maintain progress.

- Many banks face the challenge of an unwillingness to improve or adapt to new methods. Standardized with set practices in conventional ways, some locations in tier two and three cities

across the country face this challenge. These units also lack the level of commitment required to upskill their labour force and human resources skills.

- With the lack of supporting data to implement operational changes, the banking sector is facing a disconnect between the need and response from customers. The banks adapt to a switch that fails to comply with the actual requirement of the masses.

- Banks with upscaling use of artificial intelligence need to keep up with the regulatory standards of government. The increasing services like net-banking and online transactions come under the ambit of privacy regulation policies as well, which necessitates compliance from the bank's end.

2- General Overview of UAE Banking Sector

The establishment of the UAE was announced in 1971. In the past the UAE economy relied on agriculture in oases, fishing and trade of dates, but after the discovery of oil and natural gas in 1958, that made it reconsider its ability to achieve distinguished economic growth rates. Not only directing its strtegies and agendas to achieve competitivness, especially since 2009 but also joining the technology pioneers community in 2021 that led to the distinction of its economic performance. (نعيمة، 2022)

The UAE pays attention to the information and communication technology sector, by supporting the public sector investment and to develope the infrastructure in order to make an attractive destination to technology companies.(هيام و أقبال، 2020)

The banking industry in the UAE is one of the major revenue contributors. Its banking industry has grown steadily over the recent years. Hence, it is suitable for the global economy. The banking industry in the UAE has the latest banking technology.

Until 2014, high oil prices helped boost the UAE banking sector, as the country benefited from significant liquidity from oil revenues. However, in the last two years, UAE banks have under pressure amid slower loan growth, tightening liquidity conditions and growing regulatory compliance. One notable trend in the UAE and the surrounding region is bank consolidation, which presents an efficient solution for achieving efficiency in the increqsingly costly and competitive banking environment.

Prior to 2016, the banking sector was under pressure due to economic slowdown and higher operating costs.

While banks around the world faced a state of uncertainty when dealing with the economic challenges resulting from the outbreak of covid-19, the banks operating in the UAE dealt with these repercussions effectively and proved to be successful when put to a real test, which showed that they were able to excel and keep moving forward efficiently. The success was attributed to the UAE banking sector's strong financial fundamentals as the wise management and high efficiency of central bank of the UAE (CBUAE one of the top 10 central banks in the world).

Table (01): Banks in the UAE and Their Local Branches From 2012 to 2022

Unit of measure: bank

National	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Banks	23	23	23	23	23	22	22	21	21	21	22
Branches	841	841	869	874	846	771	743	656	524	365	233
Foreign	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022

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Banks	22	22	20	20	37	39	38	38	38	38	39
Branches	83	83	82	82	85	82	80	79	70	63	63

Source : The table is based on
- **Central bank of the UAE Annual Reaports from 2012 to 2022**
- **UAE banks Federation : Annual Reports of 2019, 2020, 2021**

It is noted in the above table that the number of banks in the UAE during the period from 2012 to 2022 has been somewhat stable, as the number of banks during the years from 2012 to 2016 was 23 banks, to decrease to 22 banks in the years 2017 and 2018, as for the three years 2019, 2020 and 2021 It has decreased to 21 banks, while in the year 2022, 22 Emirati banking institutions have been registered in it.

As for the number of branches, it was known to fluctuate, sometimes increasing and sometimes decreasing, so that the number of branches registered in 2012 moved from 841 branches to 874 in 2015, then decreased to 233 branches during the year 2022, and the recorded decline dates back, especially to the year 2019, which is the stagnation of the economic and financial movement in the world due to Covid 19.

But for the foreign banks operating in the UAE, the number increased during the period from 2012 to 2022, which explains the presence of the incentive ingredients for the success of foreign financial investment in the UAE. The number of the foreign banks branches decreased from 83 branches in 2012 to 63 branches in 2022.

Table (02) : UAE Total Bank Assets from (2006-2022)

In Billions Dirhams

year	2006	2007	2008	2009	2010	2011	2012	2013
Total Deposits	555	-716	992.5	1519	1605.6	1069.7	1168	1277
Total Credits	520	725	1018.5	1017.7	1031.3	1071	1099	1177
Total Assets	852	1240	1456.2	1519	1605.6	1662	1792	2100

year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Deposits	1421	1472	1563	1627	1756	1870	1902	1978	2091
Total Credits	1378	1485	1574	1580	1656	1759	1824	1618	1639
Total Assets	2305	2478	2611	2694	2869	3083	3188	3321	3523

Source : The table is based on :

- UAE : Central Bank of the U.A.E, Reports of Monetary, Banking&Financial Markets Developments of 2021, 2022
- UAE banks Federation : Annual Reports from 2006 to 2020

Through the information in the above table, it can be said that, in general, the total deposits in banks in the UAE increased during the period from 2006 to 2020, which is due to the policies adopted by banks to absorb excess liquidity in order to integrate it into the national economy and achieve investments and added value. In deposits from 2011 to 2020 without recording any decrease, which confirms the existence of an effective policy.

The total credit reflects the various lending and borrowing operations carried out by the bank during a specific period and under certain conditions, and expresses the bank's granting of loans to individuals and institutions. Through the table above the total credits. The bank credit of the UAE banks increased during the study period (from 2006 to 2020), which reflects the banks' adoption of secured bank credit policies, which made the banks recover their money and work to reuse it in favor of investment projects.

Total assets are considered one of the most important indicators for analyzing the performance of banks, as they reflect various physical assets such as buildings, loans, reserves, bank deposits with others (with other banks), and investment securities; In addition to the cash in the bank's safe. It is noted that the total assets of UAE banks during the study period increased from 852 in 2006 to 3188 in 2020 This indicates that the financial performance of banks is good and that economic investment activities depend on banks to a large extent.

3- The use of Artificial Intelligence by UAE banking institutions

The adoption of AI by financial institutions (FIs) in the UAE will accelerate as technology advances, user acceptability rises, and regulatory landscapes change. By providing customers with 24-hour access to their accounts and financial advisory services, banks may greatly enhance the customer experience and streamline laborious operations utilizing AI. Financial institutions (FIs) are implementing AI algorithms across all financial services focusing on the important business benefits and pressure from tech-savvy consumers.

Through the use of analytics, risk management system scan analyze large amounts of data to identify hidden patterns and measure the organization's current cost of risk. This type of data driven intelligence can be used to anticipate risks and to make appropriate changes in a bank's risk strategy. Advanced analytic models are also useful to allow banks to measure the impactof mitigating actions and to understand the correlation between their risk management practices and their losses. By leveraging these technologies banks can gain real time insight into risks and achieve a predictive advantage, helping them better identify and manage risks before they lead to losses.

In time of crisis, AI-driven credits decisioning can help the bank manage credits risk effectively in hte following areas : (Slim & Akshay, 2023)

Credit assassment : AI can accurately help analyze a large segment of consumers and determines whether a particular customer is eligible for the loan.

Limit mangement : AI cana nable dynamic limit monitoring which can help the banks in revisisng the limits on an on-going basis and even determine the maximum borrowing threshold based on pre-determined paramertres.

Dynamic pricing : AI can help the bank achieve dynamic pricing which may enable banks to offer highly competitive rates and adjust pricing according to market shifts.

UAE banks are constantly reshaping their physical infrastructure to improve efficiency and reduce operating cost. Artificial intelligence (AI) and the internet of things promise to disrupt business models in ways that have never been seen before. Contrary to widespread belief, AI will likely not lead to the reduction of the number of employees in the banking industry, but rather to a

redistribution of resources. In fact, according to KPMG's 2018 CEOs outlook for the UAE and Oman, many CEOs believe that the long term implications of AI adoption are positive : 86% of CEOs say that AI will creat more jobs than it eliminates.

AI and automation will largely improve efficiency, anabling people to focus on more important aspects of the industry, such as customer service, data analysis and decision-making. However, effective measures must be taken to protect personal data in AI and automated ecosystems to secure customers' buy-in. Both the UAE government and UBF are heavily invested in promoting and developing this innovative technology. Which is already having a discruptive effect on old business models and encouraging more banks and financial institutions to join its ranks.

Automating processes is probably the most common use case of artificial intelligence in the finance industry, as this technology has evolved enough to be able to take over most of the tasks traditionally performed by humans.

3-1- Fraud Prevention Awareeness Campaign:

Based on UBF's CEOs' Advisory Council approval, and in coordination with UBF's Marketing and Fraud Prevention Committes, UBF in coordination with CBUAE, Abu Dhabi Police and DDubai Policen, has launched the ''National Fraud Awareness Campaing' under the title ''Together Against Fraud'' on 15th April 2020 until Decemer 2020. The capaign coved 8 types of Fraud such as: Phone Fraud, Lottery Fraud, Magic Ink Fraud, Email Fraud, Data privacy Fraud, ATM Fraud, Fund Transfer Fraud, and Sim Swap Fraud. Banks' clients can report any fraudulent activities by using Abu Dhabi and Dubai Police posted on its website.

3-2- Cybersecurity : in light of the rapid changes witnessed in 2020, remote work developments and growing demand for electronic financial services, the banking sector prepared a superior infrastructure to meet the growing demand in this domain. Likewise, the CBUAE, which was also alert to the accompanying challenges, urged the banks operating in the UAE to strengthen their immunity against cyberattacks and keep developing their IT infrastructure and cybersecurity capabilities in accordance with the worl's best practices and standards. **(Federation, 2020)**

The CBUAE continued to co-operate with all the sector's staff with the aim of enhancing its resilience and protecting the national financial system against threats. The CBUAE supervises and regulates such sectors as the banking services, insurance, exchange companies and payment service providers. It also ensures that the highest larket behaviour standards are followed and provides hte appropriate environment for the development of sectors in a lanner that ensures financial stability, encourages competition and supports Emiratisation.

By 2030, it is expected that using AI in financial services will lead to a cost saving of more than USD 1 trillion, with traditional banking institutions saving around 22 percent of their total cost. (Nasrallah, 2021) Indeed, artificial intelligence can better provide cash-based alternatives that are more afforable and reliable.

4-A Comprehensive View of the Banking Sector in the UAE National Strategy for Artificial Intelligence 2031

The UAE Government first launched its Artificial Intelligence Strategy in 2017, which marked its government's reliance on various future services, sectors, and infrastructure projects utilizing AI. The Ministry of AI was set up in 2017, its role is to focus on the implementing of AI tools and technologies across various fields of work such as education, air traffic, industry and the banking sector. The ministry has started its 'Think AI Initiative' to develop an "integrated system that employs artificial intelligence in vital areas in the UAE".

With this initiative, UAE aims to be the world leader in AI by 2031 and expand the use of AI across sectors like education, energy, transportation, space, and technology, etc. The country has set up an AI ministry to create a long-term AI strategy. The ministry has proposed to adopt an AI curriculum and launch six smart platforms to integrate technology within the education system.

UAE aims to boost its GDP by around 35% ($96 billion) using AI technologies. It will help the country cut down government spends by up to 50%, saving approximately $3 billion.

The use of AI in UAE banking sector is a proactive and effective risk management to identify early warnings using analytics. The effective management of banking sector starts with a governance framework, an underwriting process and a sound lending policy at the time of origination. This involves developing more rigorous qualitative and quantitative standards when lending followed by effective standards when lending followed by effective standards when lending followed by effective risk management which can help banks identify early warning signs. History has shown that during recession, banks face significant pressures in manging their existing customer reltionship and the risk of delinquency. Being able to understand the financial sitution of each customer beforehand and act upon it with foresight can be a source of competitive advantage.

Artificial Intillegence (AI)/ Machine learning (ML) can enable faster identification of risks from more valued sources, monitor customer behevior and adjust risk management strategies. More precisely, AI/ML powered solutions can help with predictive modeling and improve forecasting accuracy. This is crucial in time of crisis as traditional regression model scan not adequately capture non-linear relationships between the macro-economic environment and the finnces of a borroer in the event of a stressed scenario.

Figure (03) : How banks are extending their use of AI
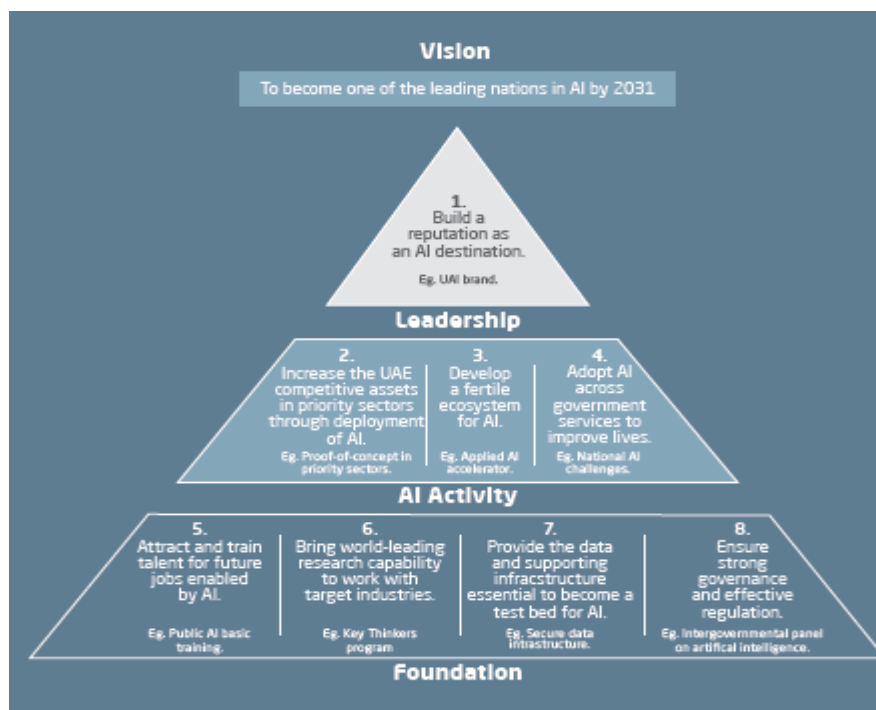
Source : UAE National Strategy for Artificial Intelligence 2031

The role of any new minister is to set a direction for their tenure and orchestrate the vision set by the leadership. The uae has a vision to become one of the leading nations in AI by 2031 in alignment with the UAE centennial 2071, creating new economic, educational, and sacial opportunities for citezens, governments. There are eight strategic objectives outlined in the AI strategy, namely :

- Build a reputation as an AI destination : this objective relies on achieving the other sevenobjectives. To become a global AI leader, the UAE needs to compete with destinations around the world that are also trying to attract scarce AI talent and grow AI investment. The AI will consist of four levels of approval to include public sector level, private sector level, institutional level and product level.
- Increase the UAE competitive assets in priority sectors through deployment of AI : the largest economic gains from AI will come in significant and mature sectors, where the AI potential is also high-finance, resources, construction and retail trade.The AI use will firmaly estabilsh UAE's credential as a world leader in AI and act as a catalyst to attract further talent and investment focusing efforts in industries with an obvious potential for AIdevelopment.
- Develop a fertile ecosystem for AI : a combination of funding, knowledge, and strategic support will be needed to develop a domestic AI ecosystem. This starts with better access to local data infrastructure and funding for projects that make the most of this which will lead to opportunities for building new companies.
- Adopt AI across customer services to impove lives and government :
- Attract and train talent for future jobs anabled by AI.
- Bring world-leading research capability to work with target industries.
- Provide the data and supporting infrastructure essential to become a test bed for AI.
- Ensure strong governance and effective regulation.

The next few years may be challenging for banks, making the transformation of risk efficiency and effectiveness crucial for organizations with an aspiration to land on the right side of the credit cycle.

Conclusion

The United Arab Emirates has got one of the most vibrant banking and financial sectors in the Middle East. The country's banking industry is heavily influenced by Islamic financial principles. There are also several foreign banks operating in the country which follow western financial principles. The UAE Central Bank controls banking and financial services in the country. The industry has both indigenous and foreign banks that engage in different forms of financial activities. The UAE financial industry is an active participant in global financial activities.

While AI has been adopted enthusiastically by the trading, marketing, fraud management, and customer service departments of financial institutions, its adoption on the credit side has been patchy. AI usage is common in some areas of credit risk analysis, but other areas – such as commercial lending – have been slower to adopt AI tools.

In order to answer this research paper main problem we conclude that the The United Arab Emirates launched its Artificial Intelligence Strategy in 2017. The National Strategy for Artificial Intelligence in 2031 vision aimed to contribute to asset management, risk mangement, various customer-oriented services, and data processing to predict and anticipate the future of the economy and the banking industry. The use of AI in banking sector has great benefits as strengthing their immunity against cyberattacks, fraud prevention, an effective way of risk management to identify early warnings using analytics.

The UAE Goverment has planned eight strategic objectives within four levels of approval to include public sector level, private sector level, institutional level , and product level.

Broadly speaking, AI can be used as a useful and powerful tool for enhancing operational efficiency, fairness, and accuracy in lending and credit risk analysis and to asset management, fraud prevention, risk management and various customer-oriented services in UAE banking sector.

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