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In an era dominated by rapid technological advancements, artificial intelligence (AI) has emerged as a transformative force across various industries, with banking being one of the most affected sectors. The Union of Arab Banks published a report entitled "Artificial Intelligence Applications in the Service of Arab Banks" in February 2025; they discuss how AI is reshaping the banking landscape by enhancing operational efficiency, optimizing risk management, and revolutionizing customer service. Over the past decade, global banks have invested heavily in AI technologies to streamline processes, provide personalized financial solutions, and improve security measures. Reports indicate that AI could contribute as much as \$15.7 trillion to the global economy by 2030, with a significant portion of this impact stemming from increased productivity and enhanced consumer experiences. The banking sector, particularly in the Arab World, stands at a crucial juncture where AI adoption presents significant opportunities while simultaneously posing considerable challenges that must be addressed strategically.

The application of AI in banking has facilitated a shift toward data-driven decision making, allowing financial institutions to analyze massive amounts of customer data to enhance service offerings. AI-powered analytics provide banks with insights into customer behavior, enabling them to offer highly personalized financial products tailored to individual needs. Through deep learning techniques and historical data analysis, banks can

provide customers with targeted loan recommendations, customized investment portfolios, and optimized banking services that align with their financial goals. This level of personalization significantly enhances user experience, leading to higher customer satisfaction and loyalty. AI driven chatbots and virtual assistants have further transformed digital banking, offering 24/7 support for various banking operations. Customers can now access real time assistance for tasks such as fund transfers, account inquiries, and fraud alerts without the need for human intervention. Many Arab banks have already integrated AI chatbots to improve customer engagement and streamline routine transactions, thereby reducing operational costs and enhancing efficiency.

Beyond customer service, AI plays a crucial role in risk management and fraud detection. Traditional methods of credit scoring often rely on limited financial indicators, whereas AI powered credit assessment tools analyze a comprehensive set of variables, including transaction history, spending patterns, and even social behavior, to determine creditworthiness with greater accuracy. This enables banks to make more informed lending decisions, minimizing default risks while ensuring greater financial inclusivity. Fraud detection has also become significantly more sophisticated with AI. Machine learning algorithms analyze transactional data in real time, identifying anomalies and potential security threats before they materialize. By recognizing suspicious patterns and flagging fraudulent activities, AI enhances banking security and ensures compliance with international regulatory standards such as those set by the Financial Action Task Force (FATF) and the Basel Committee on Banking Supervision.

One of the most significant indicators of AI's growing role in banking is the scale of investments being made in the field. In 2023 alone, banks worldwide allocated over \$20 billion to AI driven initiatives, surpassing all other sectors in AI spending. A particularly striking example is J.P. Morgan, the largest bank in the United States, which invests more than \$15 billion annually in technology, including AI driven solutions. This level of commitment underscores the financial industry's recognition of AI's potential to reshape banking operations, improve risk management, and drive innovation. Global spending on AI is projected to continue growing

with estimates suggesting that the market for AI software, hardware, and services will reach \$166 billion by 2024 and exceed \$400 billion by 2027. Furthermore, according to AltIndex.co, the AI industry is expected to grow at an annual compound rate of 17%, reaching a valuation of over \$500 billion by 2027.

The impact of AI investments extends beyond major international banks to regional financial institutions. In Europe, for instance, banks have significantly increased their investment in AI startups, with 45% of total banking AI investments in 2023 going toward fintech companies specializing in AI driven financial solutions. This marks a dramatic rise from just 10% in 2015, indicating a strategic shift toward embracing AI innovation. In contrast, Arab banks have been slower to scale their AI investments compared to Western financial institutions. However, there is increasing momentum in the region, with 45% of Middle Eastern banks now using AI for automating routine tasks and 50% implementing AI powered chatbots for customer services.

The automation of internal banking operations represents another critical application of AI. Robot Process Automation (RPA) is widely used to manage repetitive administrative tasks, including document verification, transaction processing, and financial reporting. This not only reduces human errors but also frees up employees to focus on more strategic and high value responsibilities. AI driven predictive analytics have also become an essential tool in financial planning and asset management. Banks leverage AI models to forecast market trends, anticipate economic fluctuations, and optimize investments decisions. By analyzing large datasets, AI helps financial institutions reduce risks, maximize returns, and make data driven investment choices that align with market conditions.

Despite the numerous advantages AI offers, its adoption in Arab banking faces several challenges. One of the primary obstacles is the issue of data quality and integration. AI models require vast amounts of accurate and structured data to function effectively. However, many banks still struggle with fragmented and inconsistent data systems, leading to inefficiencies in AI implementation. Ensuring data security and compliance with privacy

regulations is another major concern. As AI relies on extensive data processing, financial institutions must implement stringent cybersecurity measures to protect sensitive customer information and prevent cyber threats.

A significant challenge that hinders AI adoption in Arab banking is the shortage of skilled professionals in AI and data science. The growing demand for AI specialists, including data analysts, machine learning engineers, and fintech experts, far exceeds the available talent pool. Without sufficient expertise, banks may face difficulties in developing AI solutions effectively. Furthermore, resistance to change within financial institutions presents an additional hurdle. Many traditional banks operate within rigid organizational structures where employees and management may be hesitant to embrace AI driven transformations. This cultural resistance can slow down the pace of AI adoption and limit potential impact.

Regulatory and ethical considerations also pose significant challenges to implementation in banking. Financial institutions must navigate complex regulatory landscapes that govern AI usage, data privacy, and ethical AI practices. The potential for algorithmic bias remains a critical concern, as AI models trained on biased data can inadvertently lead to discriminatory lending practices or unfair financial decisions. Banks must therefore ensure that AI driven decision making processes are transparent, fair, and aligned with ethical guidelines.

The impact of AI on employment in the banking sector has also sparked debates regarding job displacement and workforce transformation. As AI automates routine tasks, traditional banking roles, such as customer service representatives and data entry clerks, may become obsolete. However, while some jobs may be eliminated, AI also creates new employment opportunities that require specialized skills in data analytics, AI governance, and cybersecurity. To address this shift, banks must invest in upskilling and reskilling programs to equip employees with necessary expertise to work alongside AI systems. Organizations that proactively

embrace workforce transformation will be better positioned to leverage AI's benefits while minimizing job losses.

To overcome the challenges associated with AI adoption, Arab banks must implement comprehensive strategies aimed at fostering technological innovation and regulatory compliance. Strengthening technological infrastructure is essential to facilitate seamless AI integration. Banks must modernize their legacy systems and invest in cloud computing, big data analytics, and cybersecurity solutions to support AI driven operations. Enhancing human capital is equally crucial. Financial institutions should prioritize workforce development by offering specialized AI training programs, collaborating with universities, and fostering partnerships with fintech startups.

In conclusion, AI is revolutionizing the banking industry, offering unparalleled opportunities for efficiency, security, and customer-centric services. Arab banks stand to benefit immensely from AI integration, provided they address the challenges that accompany its adoption. While AI presents risks related to data privacy, workforce displacement, and regulatory complexities, these challenges can be mitigated through proactive strategies that emphasize technological investments, skill development, and ethical governance. The future of banking in the Arab world will be defined by the extent to which financial institutions embrace AI driven innovations while maintaining a balance between automation and human expertise. By adopting a forward thinking approach, Arab banks can leverage AI to drive financial inclusion, enhance operational efficiency, and maintain a competitive edge in an increasingly digitalized global economy.

In Lebanon, of course, the priority at the moment is to restructure banks and close the financial gap. Once these are behind us, Lebanese banks can move on to retool operations towards more technological applications, including AI, as prior to the crisis they have been leaders in new trends in the region.

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