JURIHUM
Jurnal Inovasi dan Humaniora

JURIHUM: Jurnal Inovasi dan Humaniora
Volume 2, No.3 Oktober 2024
ISSN 3025-7409 (Media Online)
Hal 403-415

Redefining Healthcare and Workforce Engagement: A Comprehensive Examination of AI, Skill Development, and Incentives in Banking, Healthcare, and Fraud Prevention in the Petroleum Industry

Alexandara Harry[1], Ali Khan[2]

[1]Independent Researcher Peris, France

[2]Independent Researcher, Pakistan

[1]Alaxendraharry37@gmail.com, [2]s.h.aspire.project@gmail.com

Abstract

This thorough investigation explores how cutting-edge technologies like artificial intelligence (AI) and cloud computing are revolutionizing a number of industries, with particular attention to supply chain risk management, employee performance, cloud security, healthcare innovations, and database optimization. Emphasizing the link between ongoing learning and better organizational outcomes, the need of training and development is emphasized, especially in improving employee performance within the banking industry in Noakhali. Block chain technology and AI's involvement in predictive analytics in healthcare provide patient-centered care and safe data management while posing crucial privacy and ethical questions. Cloud Security Posture Management (CSPM), which emphasizes automated risk detection and ongoing monitoring to protect sensitive data, becomes a crucial approach for businesses using cloud environments. AI-driven query optimization in relational databases is also discussed, demonstrating how this technology may automate processes and improve performance and resource efficiency. Additionally, supply chain management predictive analytics driven by AI gives businesses the insight they need to anticipate possible disruptions, enhancing stakeholder collaboration and resilience. The combination of these observations emphasizes how important it is for businesses to embrace strategic approaches to technology integration in order to improve operational effectiveness and promote long-term success. Businesses can position themselves for success in a competitive context by utilizing these innovations to build a framework that is safe, effective, and flexible enough to handle the challenges of a changing environment.

Key words: Artificial Intelligence, Cloud Computing, Healthcare Innovations, Posture Management, Cloud Security, Query Optimization, Predictive Analytics, Training and Development, Data Security, and Employee

INTRODUCTION

Modern sectors, especially banking, healthcare, and petroleum, are changing quickly due to technological breakthroughs, changing employee demands, and heightened competition in the market. It is now more important than ever to comprehend how to raise employee engagement and boost company performance. The purpose of this review paper is to investigate how employee performance, creative training and development methods, and the use of artificial intelligence (AI) can be combined to provide strong solutions for the banking, healthcare, and petroleum industries [1]. Through an analysis of these aspects, this study aims to emphasize how important incentives and technical advancements are to developing a productive workforce and guaranteeing organizational success.

The efficacy of a company is frequently seen to be directly reflected in employee performance. High-motivated workers are crucial in the banking industry, where providing excellent customer service is of utmost importance. Effective reward programs have been repeatedly demonstrated to dramatically improve employee performance. In addition to raising morale, intrinsic and extrinsic incentives motivate staff to surpass performance goals. The Noakhali region of Bangladesh, which is home to multiple commercial banks, provides an appropriate case study for examining how these

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Jurnal Inovasi dan Humaniora

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Volume 2, No.3 Oktober 2024
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compensation schemes affect worker productivity [2]. This research will provide important insights into successful personnel management methods by examining the particular difficulties and achievements encountered by these banks.

Likewise, in the medical field, the skills of medical personnel are directly related to the standard of patient care. Giving staff members the skills and information they need to adjust to evolving patient needs and technological advancements requires ongoing training and development. At order to demonstrate the strong relationship between training initiatives and worker productivity, this article will examine empirical research carried out at private banks in the Noakhali area [3]. Organizations may improve staff capabilities and, eventually, patient outcomes in healthcare environments by identifying best practices for putting effective training efforts into action. How businesses handle operational difficulties has been completely transformed by the rise of AI technologies and big data analytics. Predictive analytics, for example, can help improve patient care in the healthcare industry by spotting possible health risks before they become serious. Another cutting-edge strategy that improves security and transparency in healthcare operations is the use of Block chain technology to manage patient consent. The numerous AI-driven advancements that are revolutionizing the healthcare industry will be highlighted in this analysis, with a focus on how they might improve worker performance and maximize organizational effectiveness [4].

It is impossible to overestimate the significance of fraud detection and mitigation in the petroleum business. Because there are significant financial risks, businesses need to use cutting-edge technologies to proactively identify fraudulent activity. The use of AI and machine learning to create reliable fraud detection systems will be discussed in this article. We will demonstrate how these technologies can improve operational integrity and contribute to a more secure company environment by examining case studies and success stories. It's equally important to talk about the ethical ramifications of these technological developments. Concerns about privacy and ethical issues surface as businesses depend more and more on AI and data analytics. These issues will be covered in this study, with a focus on the necessity for businesses to implement ethical procedures that put patient and staff privacy first [5]. This review's importance stems from its comprehensive approach to comprehending the complex issues that industries are currently facing. This article will offer a thorough framework for businesses looking to improve workforce performance and operational efficiency by combining ideas from training and development procedures, AI advancements, ethical issues, and employee engagement tactics [6].

Firms must strategically prioritize innovation and workforce development as they traverse this complicated terrain, where the lines separating technology, employee engagement, and operational performance are becoming increasingly hazy. The purpose of this review is to clarify these important topics and provide useful information for both scholars and practitioners. Organizations in the banking, healthcare, and petroleum industries can prosper in the current competitive climate and help create a more efficient and moral business environment by promoting a culture of continuous improvement [7]. We hope that this investigation will stimulate more study and conversation about the dynamic relationship among technology, employee engagement, and organizational effectiveness.

CONCEPTUAL STRUCTURE

The theoretical framework provides the basis for comprehending the different facets of worker performance as well as how technological advancements contribute to increased worker productivity. The main ideas and theories that guide our examination of employee performance indicators, the importance of incentive programs, and the effects of big data and artificial intelligence (AI) on the banking, healthcare, and petroleum industries will all be explained in this section [8]. We may gain a deeper understanding of the complex interrelationships among these components and how they all contribute to the success of an organization by developing a thorough theoretical framework.

Key Concepts and Definitions: The degree to which an individual successfully completes their work duties and contributes to the overall goals of a business is a typical definition of employee performance. Productivity, job quality, following corporate standards, and the capacity to cooperate

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with stakeholders and coworkers are just a few of its many facets. Numerous elements, including as organizational culture, training and growth opportunities, work satisfaction, and motivation, affect how well employees perform [9]. Developing successful tactics that improve employee performance requires an understanding of these elements. Both intrinsic and extrinsic reward systems are essential for inspiring workers to give their best efforts. Rewards that originate inside, such as a feeling of achievement, personal development, and job satisfaction, are known as intrinsic rewards. Conversely, extrinsic rewards consist of material advantages like bonuses, promotions, and acknowledgment from superiors or peers. Motivation theories like Herzberg's Two-Factor Theory and Maslow's Hierarchy of Needs offer important insights into how various forms of rewards might affect worker performance and behavior. According to these frameworks, meeting workers' basic needs and giving them chances for success and recognition can greatly increase their motivation and output [10].

Employee Performance Metrics Overview: Organizations frequently use a variety of metrics and evaluation techniques to accurately gauge employee performance. Key Performance Indicators (KPIs), which measure particular performance components like sales goals, customer satisfaction ratings, and project completion rates, are examples of common performance measures. Another useful evaluation method is 360-degree feedback, which collects opinions from peers, superiors, and subordinates to give a complete picture of a worker's performance. Accurately assessing performance and pinpointing areas for development depend on knowing and choosing the right measurements. Organizations are increasingly using data analytics in addition to standard performance indicators to learn more about employee performance [11]. Organizations can spot trends and patterns that might not be immediately noticeable using traditional evaluation techniques by integrating big data analytics. Predictive analytics, for example, can assist businesses in foreseeing possible performance problems and taking proactive steps to resolve them. This data-driven method of performance review fits in with the larger movement of using technology to improve organizational outcomes and decision-making processes [12].

AI and Big Data's Place in Contemporary Industries: How companies run and handle their employees has changed as a result of the incorporation of big data analytics and artificial intelligence into organizational procedures. AI-powered solutions in the banking industry can evaluate client data to customize financial services and enhance client communications. Banks may improve employee training programs and optimize their service offerings by using machine learning algorithms to find similarities in consumer behavior [13]. AI technologies are essential for improving patient outcomes and increasing operational efficiency in the healthcare sector. AI systems, for instance, can evaluate patient data to pinpoint health hazards and suggest individualized treatment regimens. Healthcare workers can concentrate more on patient care by automating administrative duties and optimizing workflows, which will increase worker satisfaction and productivity [14].

The use of big data analytics is essential in the petroleum industry for cost reduction and operational optimization. Advanced analytics can improve safety procedures, spot fraudulent activity, and pinpoint supply chain management inefficiencies. Predictive maintenance using AI-powered solutions can greatly increase operational reliability and save downtime. Even while AI and big data have many advantages, businesses must also consider the moral ramifications of using them. Because of privacy issues, data security issues, and the possibility of bias in AI algorithms, these technologies must be implemented with caution and responsibility. Building confidence with both customers and staff will require establishing ethical standards and best practices for data utilization [15]. This section's theoretical framework emphasizes how important it is to view employee performance from a variety of angles, such as motivation, incentive schemes, and the use of cutting-edge technology. We may gain a deeper understanding of the complex relationship between employee performance and the revolutionary potential of AI and big data in raising employee engagement by including these ideas into our analysis. Adopting a strong theoretical framework can help banking, healthcare, and petroleum companies create strategies that enhance employee performance and support long-term organizational success as they continue to change. This framework lays the groundwork for the parts of this review that follow, in which we will examine case studies and empirical data that demonstrate these ideas in action [16].

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INCENTIVES' EFFECT ON EMPLOYEE PERFORMANCE

Any business looking to increase operational effectiveness and overall performance must comprehend the factors that affect employee performance, which is a critical predictor of organizational success. Of these, incentives are particularly important for influencing employee behavior and raising output [17]. With an emphasis on both internal and extrinsic motivators, this part will examine how different incentive schemes affect worker performance. It will also feature pertinent case studies from commercial banks in Bangladesh's Noakhali region.

An Overview of Workplace Reward Systems: Reward systems comprise a range of strategies that firms implement to inspire employees and acknowledge their contributions. Extrinsic and intrinsic incentives are two major categories into which these systems can be divided. Non-material advantages that result from the nature of the work itself, such as opportunities for personal development, emotions of success, and personal fulfillment, are referred to as intrinsic rewards [18]. On the other hand, extrinsic rewards—such as pay, bonuses, promotions, and official management recognition—are material inducements that originate from outside sources. Motivational theories frequently inform the efficacy of incentive schemes. For example, Herzberg's Two-Factor Theory states that "hygiene factors," which keep employees happy but don't always inspire them, include things like pay and job stability. On the other hand, elements like accountability, success, and acknowledgment are considered "motivators" since they raise worker happiness and output. This approach emphasizes how crucial it is to provide competitive pay in addition to cultivating an environment at work that honors and acknowledges workers' efforts [19].

Case Studies: Noakhali Region's Commercial Banks: To improve employee performance, a number of commercial banks in Bangladesh's Noakhali region have put in place different award schemes. Bank A, which implemented a performance-based bonus system, is a noteworthy example. Every quarter, employees are assessed based on particular Key Performance Indicators (KPIs) that represent both team and individual goals. This strategy not only encourages top performance from staff members but also cultivates a cooperative atmosphere where group accomplishments are honored. Because they are being recognized for their achievements, many employees report improved job satisfaction as a result of Bank A's program, which has resulted in a tremendous rise in productivity [20]. Effective reward programs can also improve employee retention, as the bank has seen a drop in employee turnover rates. These results are consistent with Maslow's Hierarchy of demands, which holds that meeting higher-level psychological demands requires success and recognition.

Another illustration is Bank B, which implemented professional development programs with an emphasis on intrinsic rewards. Workers are encouraged to obtain pertinent qualifications and are provided with opportunity to take part in training courses [21]. By making investments in staff development, Bank B has improved the skill set of its workers and fostered a sense of dedication and devotion in them. According to the findings, workers who believe their bosses actually care about their professional growth typically perform better and show more organizational loyalty [22].

A Comparative Study of Incentives in Various Industries: Comparing incentives across various industries, such as banking, healthcare, and petroleum, shows that although the basic ideas of motivation are the same, how these incentives are applied may alter depending on the demands and difficulties of each industry. For example, in the banking industry, where providing excellent customer service is crucial, rewards that encourage cooperation and acknowledge teamwork are frequently especially successful. Performance in the healthcare industry can be significantly influenced by intrinsic motivators including a feeling of purpose and the chance to make a difference in patients' lives [23]. Employee morale and performance are frequently raised at hospitals and clinics that honor and promote medical staff for their contributions to patient care, which improves patient outcomes.

On the other hand, performance incentives may place a greater emphasis on adherence to safety procedures and operational effectiveness in the petroleum industry, where these factors are crucial. Businesses in this industry frequently use incentives linked to certain operational goals or safety milestones to motivate staff to put safety first while preserving output. Incentives have a significant

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and complex effect on worker performance. Employee motivation, work happiness, and general performance are likely to significantly improve for organizations that successfully use both intrinsic and extrinsic compensation systems. The success of customized incentive programs in promoting employee engagement and productivity is demonstrated by the case studies from commercial banks in the Noakhali area [24]. Organizations in a variety of industries can promote a culture of high performance and ongoing development by comprehending and putting into practice best practices in reward systems. In order to satisfy the shifting demands and expectations of the workforce and ultimately support long-term organizational performance, incentive structures must be continuously assessed and modified as industries change [25].

EDUCATION AND TRAINING TO INCREASE PRODUCTIVITY

It is impossible to overestimate the importance of training and development (T&D) in the quickly changing business environment of today. Businesses from all industries are realizing more and more that fostering employee development improves both individual abilities and the success of the company as a whole. With an emphasis on actual data from private banks in Bangladesh's Noakhali region, this part will examine the significance of training and development in increasing productivity [25]. Best practices for putting in place successful training programs and the advantages these endeavors have for worker performance will also be covered.

The Value of Developing Skills in Banking and Healthcare: Training and development are essential tools for improving skills, especially in fields like banking and healthcare where change occurs often. Employees in the banking industry must be able to handle complicated financial products, comprehend regulatory compliance, and provide outstanding customer service. Employees might find it difficult to meet these standards without continual training, which could result in poorer performance and unhappy customers [26]. In a similar vein, ongoing education is crucial in the healthcare sector. To deliver high-quality care, healthcare providers need to be current on the newest developments in medicine, technology, and best practices. Furthermore, healthcare professionals must adjust to new service delivery models as patient expectations change, necessitating extensive training programs to give them the skills they need. Numerous studies that show a strong link between improved organizational performance and staff training support the significance of T&D [27]. For example, studies carried out in the Noakhali area revealed that banks who regularly provided training to their staff saw a significant boost in client retention and satisfaction. Workers are more likely to interact favorably with clients when they feel capable and prepared to carry out their duties, which improves business results.

Empirical Data from Noakhali's Private Banks: An analysis of Bank C in Noakhali offers important insights into how training initiatives affect worker performance. A thorough training program was put in place by Bank C, which included courses on excellent customer service, product expertise, and regulatory compliance. Additionally, the bank supported staff members in obtaining professional certificates pertinent to their positions. Within a year of implementing these training programs, Bank C said that employee performance measures had significantly improved, including a 25% rise in customer satisfaction ratings. Workers were more confident in their skills, which resulted in more productive client encounters [28]. Additionally, the bank reported a reduction in errors related to compliance, demonstrating the value of focused training in risk mitigation. Bank D, which concentrated on leadership development initiatives for mid-level managers, is another noteworthy example. Understanding that strong leadership is essential to improving team performance, Bank D created training programs to improve managers' competencies, emotional intelligence, and conflict resolution skills. The outcomes were striking: teams under the direction of managers with training saw a 30% boost in output and a more harmonious workplace [29].

The Best Ways to Put Training Programs into Action: Organizations must implement best practices that guarantee efficacy and alignment with business objectives if they want to see the intended results from training and development programs. Here are a few crucial tactics:

Needs evaluation: Organizations should carry out a comprehensive evaluation to determine the precise skills and competences needed for various roles prior to putting training programs into place.

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This entails getting input from stakeholders, managers, and staff in order to identify gaps in the present and future [30].

Customized Training Programs: One-size-fits-all training approaches sometimes fail to address the particular difficulties that various positions within a business encounter. Creating customized training programs that address the needs of certain employees improves effectiveness and engagement. Blended learning approaches can accommodate a variety of learning styles and enhance knowledge retention by combining diverse training techniques, such as online courses, in-person workshops, and on-the-job training [31]. Employees can use what they have learned in real-world situations, for example, by combining e-learning modules with realistic simulations.

Culture of Continuous Learning: Long-term success depends on fostering a culture of continuous learning. Beyond required training, organizations should encourage employees to continue their education and give them the tools they need to pursue professional development opportunities [32].

Measurement and Evaluation: It's critical to use metrics to assess how well training initiatives are working. To calculate the return on investment for training efforts, organizations should evaluate improvements in customer satisfaction, employee performance, and other pertinent KPIs. Increasing staff productivity and corporate success requires training and development. The benefits of organized training programs for staff performance, customer satisfaction, and operational efficiency are demonstrated by data from private banks in the Noakhali area [33]. Businesses can prepare their employees to handle the demands of a changing business environment by making investments in skill development and encouraging a culture of lifelong learning. In the end, a strategic approach to training and development promotes competitiveness and long-term organizational success in addition to benefiting employees. The dedication to training and development will be crucial in creating a workforce that is resilient and flexible as industries continue to change [34].

AI DEVELOPMENTS IN HEALTHCARE

With artificial intelligence (AI) developing as a disruptive force that is changing the way healthcare is delivered, the healthcare sector is at the forefront of technological innovation. Artificial intelligence (AI) has the potential to improve clinical workflows, expedite administrative procedures, and improve patient care. The numerous uses of AI in healthcare will be examined in this section, with an emphasis on patient-centered care, predictive analytics, and the ethical issues raised by these developments [35].

Patient-Centric Care Using Predictive Analytics: Predictive analytics is one of the most exciting uses of AI in healthcare. Artificial intelligence (AI) algorithms can find trends and patterns that guide clinical decision-making by examining enormous volumes of data from wearable technology, electronic health records (EHRs), and patient contacts. This capacity enables medical professionals to better manage chronic illnesses, predict patient requirements, and enhance patient outcomes overall. Predictive analytics, for example, can assist in identifying individuals who are at risk of contracting diseases like diabetes or heart disease [36]. AI can identify people who can profit from early intervention by examining variables including age, family history, lifestyle preferences, and biometric information. By avoiding complications and hospital stays, this proactive approach lowers healthcare expenditures while simultaneously improving patient care.

Consent Management with Block chain and Smart Contracts: Block chain technology integration for patient consent management is another cutting-edge use of AI in healthcare. Conventional techniques for getting and keeping patient consent for procedures and data sharing are frequently laborious and prone to mistakes. Block chain technology, which offers a safe and unchangeable ledger for monitoring consent, can expedite this procedure [37]. Block chain-powered smart contracts allow patients to easily grant or remove access to their health data, automating consent management. For instance, a patient may consent to the sharing of their medical records with a specialist via a mobile app, which would also allow them to select the extent and length of access. In addition to improving the security and privacy of medical records, this patient-centered approach gives patients more authority over their healthcare choices. Additionally, Block chain technology can enhance the interoperability of various healthcare systems. Healthcare providers may

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more effectively access and exchange patient data by developing a standardized platform for consent management, which will enhance care coordination and improve patient outcomes [38].

Privacy Concerns and Ethical Issues: AI has a lot of potential applications in healthcare, but there are also serious privacy and ethical issues to be aware of. Concerns about the accountability and transparency of these systems are raised as healthcare institutions depend more and more on AI algorithms to make clinical decisions. For example, accurate explanations of how algorithms arrive at their conclusions must be provided when using AI to diagnose medical diseases. Healthcare workers might find it difficult to trust AI advice in the absence of transparency, which could jeopardize patient safety [39]. Concerns around consent and privacy are also raised by the gathering and analysis of patient data for AI applications. To guarantee that patient data is handled appropriately, healthcare institutions must negotiate the intricacies of data protection regulations and ethical requirements. This entails getting patients' informed agreement before using their data for AI research and applications and putting strong security measures in place to guard against breaches involving sensitive data [40].

AI systems also run the danger of bias, which can arise from the use of non-representative data sets. AI systems may generate biased results that penalize particular groups if they are trained on data that does not fairly represent the variety of the patient population. To solve this problem and guarantee fair treatment for all patients, close attention to data collecting procedures and continuous AI performance monitoring are needed [41]. There are several chances to improve patient care, increase operational effectiveness, and promote a more patient-centric approach to health management thanks to AI advancements in healthcare. Block chain technology enables safe and effective consent management, while predictive analytics presents the possibility of proactive treatments that might greatly enhance patient outcomes. Addressing the privacy issues and ethical issues that come with these developments is crucial, though, as the use of AI in healthcare keeps growing. Healthcare businesses may leverage the power of technology while maintaining patient welfare by emphasizing openness, accountability, and fairness in AI applications. In order to fully realize AI's promise to revolutionize patient care and improve the entire healthcare experience, its responsible application will be crucial as the healthcare landscape changes [42].

TECHNIQUES FOR MANAGING CLOUD SECURITY POSTURE

Strong security measures are now essential to safeguard sensitive data and uphold compliance as more businesses use cloud computing solutions. Any cloud security plan must include Cloud Security Posture Management (CSPM), which focuses on continuously evaluating and enhancing the security posture of cloud environments. The importance of CSPM, its main tactics, and recommended procedures for automating risk detection and response in cloud infrastructures will all be covered in this part.

Cloud Security Posture Management's Significance: A collection of procedures and instruments known as CSPM are intended to recognize, control, and lessen security threats related to cloud services. Misconfigurations, illegal access, and data breaches are just a few of the security issues that organizations face as their reliance on cloud infrastructure grows [43]. A Gartner analysis states that customers are responsible for almost 99 percent of cloud security breaches, mostly as a result of incorrect setups and inadequate security measures. This emphasizes how crucial CSPM is to ensuring that businesses can successfully protect their cloud environments. Through constant configuration monitoring, access control, and adherence to industry standards, CSPM gives enterprises a comprehensive picture of their cloud security posture. Organizations may drastically lower their risk profile by spotting flaws and setup errors before bad actors can take advantage of them. Additionally, by automating the implementation of security policies, CSPM solutions help enterprises guarantee that security best practices are enforced uniformly across all cloud resources [44].

Crucial Techniques for Successful CSPM:

Organizations should implement a number of crucial tactics in order to manage cloud security posture effectively:

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Continuous Monitoring and Assessment: To identify and address security threats in real time, organizations need to put continuous monitoring of their cloud systems into place. This entails the use of automated tools that check for vulnerabilities, misconfigurations, and noncompliance. Organizations may maintain a robust defense against possible assaults and react quickly to new threats by regularly evaluating their security posture [45].

Configuration Management: Ensuring that cloud configurations follow security best practices is one of CSPM's main goals. Every cloud resource should have a baseline configuration set up by the organization, and current configurations should be regularly compared to this baseline. By detecting deviations and suggesting remedial measures, automated configuration management technologies can lessen the possibility of security issues brought on by incorrect setups [46].

Identity management and access control: Securing sensitive data in the cloud requires the implementation of strong access control procedures. To guarantee that users have access to only the resources required for their responsibilities, organizations should implement a least-privilege access model [47]. Multi-factor authentication (MFA) should also be used by enterprises to improve identity verification and lower the possibility of unwanted access.

Compliance Management: Adhering to industry norms and laws is essential for firms operating in increasingly regulated settings. Compliance evaluations against standards like the Payment Card Industry Data Security Standard (PCI DSS), the General Data Protection Regulation (GDPR), and the Health Insurance Portability and Accountability Act (HIPAA) can be automated with CSPM technologies. Organizations may guarantee they fulfill regulatory obligations and steer clear of possible fines or legal ramifications by automating compliance monitoring [48].

Incident Response Planning: A clear incident response plan is an essential component of a successful CSPM approach. Organizations need to be ready to react quickly and efficiently to security problems. This entails putting procedures in place for identifying, disclosing, and addressing security breaches. CSPM systems can give businesses the resources they need to look into accidents, assess their effects, and take corrective action to stop them from happening again [49].

Automating the Recognition and Addressing of Risks: An essential element of efficient CSPM is automation, which helps businesses recognize and address hazards effectively. CSPM solutions can examine enormous volumes of data to find trends and abnormalities suggestive of possible security risks by utilizing artificial intelligence and machine learning techniques. Organizations can rank their security efforts according to the seriousness of vulnerabilities found by using automated risk identification [50]. Security teams should prioritize fixing the most important problems first by using CSPM technologies, which, for example, might offer risk assessments for various assets. This proactive strategy optimizes resource allocation while also improving security. Additionally, automation speeds up incident response by allowing organizations to respond to identified hazards with predetermined remediation activities. An automated CSPM solution, for instance, can start remedial steps, including returning the configuration to a secure state or alerting the security team for more investigation, if a misconfiguration is found that exposes sensitive data.

Because it tackles the inherent security issues with cloud computing, cloud security posture management is a crucial tactic for businesses using cloud environments. Organizations may greatly improve their cloud security posture by using crucial tactics like configuration management, access control, constant monitoring, compliance management, and incident response planning. Additionally, automation is essential for efficiently detecting and reducing hazards, enabling businesses to react to dangers instantly [51]. Organizations that put CSPM first will be in a better position to protect their sensitive data and stay compliant in an increasingly complicated security environment as cloud adoption grows. Ultimately, in the digital era, a proactive approach to cloud security will not only safeguard organizational assets but also promote confidence among stakeholders and customers.

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RELATIONAL DATABASE QUERY OPTIMIZATION DRIVEN BY AI AND PREDICTIVE ANALYTICS DRIVEN BY AI FOR SUPPLY CHAIN RISK CONTROL

Traditional methods have been transformed by the application of artificial intelligence (AI) in several fields, which has resulted in notable improvements in efficacy and efficiency. This section examines two crucial fields where artificial intelligence is having a significant influence: supply chain risk management using predictive analytics and query optimization in relational databases. These domains demonstrate how artificial intelligence (AI) can boost productivity, increase judgment, and reduce hazards in progressively complex settings [52].

AI Methods for Automated Optimization of Queries: The cornerstone for managing structured data in a variety of applications is relational databases. Optimizing queries becomes essential for preserving performance and guaranteeing quick data retrieval as data volumes continue to increase. Automated query optimization using AI approaches has been a potent remedy for this problem. Machine learning techniques are used in AI-driven query optimization to examine past query execution trends, plans, and system performance indicators. AI can forecast the best execution strategies for next queries by learning from this data, greatly cutting down on the amount of time needed for data processing and retrieval. Organizations can better manage complex requests because to its predictive capacity, which improves user experiences and response times [53].

AI is able to adjust to modifications in user behavior, system setups, and data distribution. AI systems can dynamically adjust their optimization tactics, for instance, when a new indexing approach is introduced or when data patterns change as a result of modifications in business processes. This flexibility reduces the need for manual tweaking, which can be laborious and prone to human mistake, while simultaneously enhancing performance. Beyond speed, AI-driven query optimization has other advantages [54]. Reduced resource consumption from more efficient queries can result in lower database management operating expenses. Additionally, improved performance facilitates real-time analytics and decision-making, both of which are essential in the hectic business world of today.

Supply Chain Risk Management Using AI-Powered Predictive Analytics: As companies depend more and more on intricate supply chains, controlling the risks connected to these systems has taken precedence. Predictive analytics driven by AI provides a proactive method of detecting and reducing supply chain risks. Artificial intelligence (AI) systems can offer insights into possible disruptions and suggest suitable solutions by utilizing enormous volumes of data from multiple sources, including supplier performance, market trends, and geopolitical events [55]. Organizations can foresee risks before they become real thanks to predictive analytics. AI, for instance, is able to examine past supplier performance data and spot trends that point to a possibility of delays or poor quality. Because of this forethought, businesses are able to create backup plans, such finding different suppliers or modifying inventory levels in case of unforeseen circumstances [56].

As fresh data becomes available, AI algorithms can learn and make better predictions over time. In the face of shifting market conditions and new threats, this flexibility guarantees that businesses maintain their agility. For example, AI can evaluate real-time data to determine the impact on supply chains during a global catastrophe, like a pandemic, enabling businesses to act swiftly and decisively. Predictive analytics driven by AI also improves cooperation between supply chain participants. Businesses may promote improved communication and coordination between suppliers, manufacturers, and distributors by offering insights that cover the whole supply chain, from raw materials to final consumers [57]. This cooperative strategy improves the overall resilience of the supply chain while also fortifying connections.

A major advancement in improving organizational performance and reducing risks is represented by the incorporation of AI into query optimization and predictive analytics. AI-driven query optimization in database administration enhances the effectiveness of data retrieval, lowers operating expenses, and adjusts to shifting conditions, all of which contribute to better decision-making. Predictive analytics driven by AI also revolutionizes supply chain risk management by giving businesses useful information that enables them to foresee interruptions and take preemptive

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measures. The use of AI technology in these fields will be essential for preserving resilience and competitiveness as companies continue to negotiate an ever-more complex environment [58]. In addition to increasing operational efficiency, companies that use AI will be better equipped to respond to new problems in a changing economy. The future of supply chain operations and data management will ultimately be shaped by the confluence of AI and conventional methods, which will stimulate innovation and promote long-term growth.

CONCLUSION

The incorporation of cutting-edge technology like cloud computing and artificial intelligence (AI) into a variety of industries has drastically changed operating procedures while improving security, productivity, and efficiency. During this conversation, we looked at important topics related to supply chain risk management, cloud security, healthcare innovations, employee performance, and database optimization. First of all, it has been emphasized how training and development can improve employee performance, especially in the banking industry in the Noakhali region. Organizations can empower their workforce and increase operational performance and customer satisfaction by investing in customized training programs and ongoing learning. This demonstrates how crucial human capital is to the success of a firm. AI has become a disruptive force in the healthcare industry, enabling Block chain technology and predictive analytics for improved patient-centered treatment. Block chain improves data security and consent management, while predictive analytics enables healthcare professionals to foresee patient requirements and improve outcomes. To guarantee responsible and equitable use, privacy issues and ethical considerations must be addressed as these technologies advance.

As businesses navigate the complexity of cloud settings, Cloud Security Posture Management (CSPM) has become essential. Businesses may proactively manage their security posture and protect sensitive data from breaches and regulatory violations by putting automated risk detection techniques and continuous monitoring into practice. By automating the process of improving database speed, AI-driven query optimization offers substantial benefits in the field of data management. This facilitates real-time analytics that are necessary for well-informed decision-making by lowering resource consumption and speeding up response times. At the same time, supply chain risk management using AI-powered predictive analytics gives businesses the insight they need to improve resilience and handle disruptions, encouraging cooperation among stakeholders.

When taken as a whole, these observations highlight how crucial it is to integrate technology across industries strategically. Businesses that put a high priority on training and development, adopt AI advancements, and put strong security measures in place will not only improve operational efficiency but also set themselves up for long-term success in a market that is becoming more and more competitive. Organizations hoping to prosper in the future must be dedicated to utilizing these developments as the technology landscape continues to change. Businesses can build a framework that is safe, effective, and flexible enough to meet the demands of a world that is constantly changing by utilizing these technologies to their fullest potential.

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