PROSPECT OF EFFECTIVE AND EFFICIENT USE OF ARTIFICIAL INTELLIGENCE IN NIGERIA BUSINESSES: CHALLENGES AND APPLICATION

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Abstract

This article explored the prospect of effective and efficient Artificial Intelligence (AI) in Businesses in Nigeria, its role, challenges, and applications of Artificial Intelligence (AI) in businesses in Nigeria. The reforming ability of Artificial Intelligence (AI) is of immense benefit to businesses in Nigeria, and if given a deliberate priority to strive in the country, it is possible for businesses to own machines and software's algorithms that are capable of learning from experiences, adjusting to new inputs, performing human-like tasks and enhancing the productivity of businesses. Infrastructural deficiencies, skill gaps and talent shortages, high costs of implementation, data privacy and security concerns, regulatory and ethical issues, cultural and social resistance were highlighted as some of the challenges of Artificial Intelligence (AI) in businesses in Nigeria. The paper suggested that business owners need to train and retrain their staff(s) in order to leverage on the benefits of this technology; innovative research and policymaking are needed for the use of Artificial Intelligence (AI) technology in workplace management; and government, non-governmental organisations (NGOs), and other cooperate bodies will have to review their fundamental principles of work so as to enable them to focus on full cooperation between businesses and Artificial Intelligence (AI).

Keywords: Prospect, Artificial Intelligence, Business, Effective, Efficient.

Introduction

Businesses in today's competitive era are constantly seeking alternative strategic approaches to enhance performance in an effective and efficient manner. Nonetheless, the advent of Artificial intelligence (AI) as a transformative technology has ushered in endless possibilities for businesses in Nigeria to increase productivity, reduce operational costs, enhance decision-making and attract new customers while retaining existing ones. Notwithstanding, Joao-Pierre (2017) highlighted that business intelligence applications such as Artificial intelligence use algorithms to identify trends and create insights from a business database or external inputs. Artificial intelligence makes it possible for business owners to make specific decisions while also saving tonnes of time and money.

Data collection, forecasting and trend analysis are all capabilities of AI systems. In terms of technology, Artificial Intelligence (AI) is the process of integrating cloud technology, network devices, robots, computers and the creation of digital content, as well as multiple business methods and day-to-day activities that enhances business performance (Anupama, Densy, Priyanka, & Bindhya 2023). An example of Artificial intelligence (AI) use is a programme called High Performance Analytic Appliance (HANA).

The programme views data, such as sales transactions and customer information and looks for trends and irregularities. HANA accesses data in real time, which makes it easy for faster decision-making. The intent of HANA is to make data-driven decisions that are better informed. The benefits of using Artificial intelligence include infrastructure cost reductions and operational efficiency (Joao-Pierre,

2017). Every day, businesses are using Artificial intelligence software to optimise their own processes, reduce overhead, decrease turnaround time and improve output. Technology is evolving at an unprecedented rate and businesses that have incorporated AI software into their businesses are at a distinct advantage over their competitors. Artificial intelligence was in the past, is in the present and will be in the future.

Embracing it is crucial to both the present and future marketing efforts of businesses in Nigeria (Palanivelu & Vasanthi, 2020). AI, which is performing today, includes the following types: expert systems, designed to simulate the problem-solving behaviour of a human; machine learning, which is the ability of a computer to automatically refine its methods and improve its results as it gets more data (Brynjolfsson & McAfee, 2014); natural language processing, designed to understand and analyse language as used by humans and at the same time considered to be the base for speech recognition; and finally machine vision, which is algorithmic inspection and analysis of images (Jarrahi, 2018). There is no doubt that Artificial intelligence (AI) is growing rapidly in the field of business and other aspects of human endeavours.

However, as businesses continue to adopt its usage, there are certain challenges that could emanate from the use of Artificial Intelligence (AI) by businesses in Nigeria, which include a negative impact on the labour force, thereby resulting in unemployment and job displacement of employees, data privacy and security issues, software malfunctions, etc. Furthermore, while AI's potential to drive economic growth is acknowledged, little research quantifies the specific long-term effects of AI adoption in various sectors of the Nigerian economy. It is against this background that the paper aims at unrevealing the Prospect of Effective and Efficient use of Artificial Intelligence in Nigerian Businesses:

Challenges and Applications.

Effective and Efficient use of Artificial intelligence (AI) in Businesses in Nigeria

Artificial intelligence is a global phenomenon that is revolutionizing industries at an unprecedented rate in a dynamic, complex and multifaceted business world. AI has made it possible for businesses to adopt new strategies for attracting customers, identifying profitable markets to venture into, enhancing decision-making and policy formulation, reducing operational costs, etc. Rahul (2023) stated that one of the most significant benefits of AI in business is increased productivity. By automating repetitive and mundane tasks, AI can be used to automate customer service tasks, such as responding to frequently asked questions, freeing up customer service representatives to focus on more complex issues.

In addition, AI can help businesses make more informed decisions by analysing large amounts of data and identifying patterns and trends. This can lead to improved forecasting and better allocation of resources, both effectively and efficiently. Another way that businesses are taking advantage of Artificial intelligence (AI) is through the use of business dashboards. Several software businesses are creating analytical dashboards that can gather information from other sources to enable business owners make informed decisions. One of such businesses is called Domo. Domo is a cloud-based dashboard that can scale with the size of a company. It can be used for large or small organizations. Domo can pull data from sources such as Sales Force, Square, Facebook, Shopify, and many other applications.

The programme can help businesses gain insight into their customers, sales, or product inventory (Joao-Pierre, 2017). In the same vein, applications of Artificial intelligence range from detecting trends in data to mitigating market risks, enhancing customer service through virtual personal assistants, or even analysing millions of documents across a business server to find compliance failures. But it is only recently that businesses have been able to anticipate and envision the possibilities that Artificial intelligence and robotics can bring to the future of the business world.

Artificial intelligence leverages on self-learning systems by using tools like data mining, pattern

recognition and natural language processing. So, in terms of its key business advantages over human intelligence, Artificial intelligence is highly scalable, resulting in phenomenal cost savings. Besides, Artificial intelligence's consistency and rule-based programs allow enterprises to minimize their errors. Its longevity, coupled with continuous improvements and its ability to document processes, translates into rewarding business opportunities (Palanivelu & Vasanthi, 2020). AI programs can anticipate customer needs, assist in creating highly personalized campaigns, identify customer purchasing patterns, and assist businesses in delivering better customer service (Ann, 2018).

Notwithstanding, Artificial intelligence also performs many sales tasks that fall under the headings of sales forecasting and customer retention. According to Ann (2018), the process of purchasing without a salesperson is already happening today. People purchase items and services via sites on the internet without talking to a salesperson. It will only be a matter of time when we no longer require a live person to walk us through car or real estate sales. The new automated sales processes may eliminate the need for a full sales team, but they will not eliminate the job. Furthermore, Rahul (2023) stated that by automating tasks, businesses can reduce the need for human labour, which can lead to lower labour costs. In addition, AI can help businesses optimise their supply chains, reduce inventory costs and improve delivery times.

Role and Importance of Artificial intelligence (AI) in Businesses in Nigeria

Artificial intelligence (AI) is transforming the way businesses operate. The use of algorithms and machine learning techniques to automate tasks that were traditionally performed by humans has the potential to drive significant improvements in business operations, including increased productivity, cost savings and enhanced decision-making (Rahul, 2023). The role and importance of Artificial intelligence in businesses in Nigeria cannot be over-elaborated, ranging from marketing to sales, accounting, and finance. Therefore, there is a need to consider the role and importance of Artificial intelligence (AI) for businesses in a developing country like Nigeria. Reagan & Robinson (2018) stated that Artificial intelligence (AI) can play a greater role in businesses in Nigeria. Since almost all the work is done manually by humans, AI technology is efficient enough to reduce human efforts in various areas of business, hence improving productivity.

In developed nations, in order to improve productivity in various activities in the economy, businesses use Artificial intelligence to create machine slaves that perform various activities on a regular basis. The use of AI assists businesses in getting their work done faster and with more accurate results. Error-freeness, effectiveness and efficiency are the main motives of Artificial intelligence. Artificial intelligence marketing programs enable businesses to understand the consumer and the program the consumer is using to make their decisions. AI makes it easy to envision a program or multiple programs that can find the best target consumer for the organization's product or services, create the most relevant marketing material for that audience, and determine the best avenues to distribute the materials.

On the other hand, every business can use AI applications for their financial and accounting decisions. Several analytical or business intelligence programs are in use to enable business owners to make optimal business decisions. These programs are designed to take business financial information and display it on a dashboard as both visual and report widgets. This information will provide business owners with detailed information on the market, products, operations, and possible investment opportunities. The businesses can then determine the best strategies to meet business goals (Ann, 2023).

Challenges of Artificial intelligence in businesses in Nigeria

Artificial intelligence (AI) is transforming industries worldwide, including Nigeria, but businesses in the country face several unique challenges in adopting AI technologies. These challenges range from infrastructural issues to skill gaps and regulatory concerns. Below is an analysis of these challenges

with in-text citations and references.

Infrastructural Deficiencies: Nigerian businesses often struggle with inadequate infrastructure, particularly concerning internet connectivity and power supply. These deficiencies hinder the smooth implementation of Artificial Intelligence (AI) technologies which require stable and robust IT infrastructure. For instance, only about 42% of Nigerians have access to the internet and frequent power outages disrupt business operations (Adebayo, 2021).

Skill Gaps and Talent Shortages: there is a significant shortage of Artificial Intelligence (AI) talent in Nigeria. The country lacks enough skilled professionals who can develop, implement, and manage Artificial Intelligence (AI) systems. This talent gap is due to inadequate educational programs and insufficient emphasis on STEM (Science, Technology, Engineering, and Mathematics) fields in the Nigerian educational system (Oke & Fernandes, 2020).

High Costs of Implementation: the initial costs of implementing AI solutions are high. Many Nigerian businesses, especially SMEs (Small and Medium-sized Enterprises), find it difficult to invest in Artificial Intelligence (AI) technologies due to limited financial resources. This high cost includes the purchase of Artificial Intelligence (AI) software, hardware, and the hiring of skilled personnel (Babalola, 2022).

Data Privacy and Security Concerns: the adoption of Artificial Intelligence (AI) in Nigeria is also hampered by concerns regarding data privacy and security. Many businesses are wary of how data is collected, stored, and used, given the country's relatively nascent data protection regulations. This uncertainty affects their willingness to adopt Artificial Intelligence (AI) technologies that rely heavily on data (Okeke, 2021).

Regulatory and Ethical Issues: there is a lack of comprehensive regulatory frameworks governing Artificial Intelligence (AI) in Nigeria. This regulatory vacuum creates uncertainty and risks for businesses, as there are no clear guidelines on the ethical use of Artificial Intelligence (AI). Businesses are cautious about deploying Artificial Intelligence (AI) solutions that might lead to unintended ethical or legal consequences (Ndukwe, 2021).

Cultural and Social Resistance: there is a cultural and social resistance to new technologies, including Artificial Intelligence (AI). Many Nigerians are wary of Artificial Intelligence (AI) due to a lack of understanding and fear of job losses. This resistance can slow down the adoption rate of Artificial Intelligence (AI) technologies as businesses must invest in awareness and change management initiatives (Adedeji, 2021).

Application of Artificial intelligence (AI) in businesses in Nigeria

Financial Services: Artificial Intelligence (AI) is revolutionizing the financial sector in Nigeria, particularly in fraud detection and customer service. Machine learning algorithms analyse transaction patterns to identify fraudulent activities, enhancing security (Ojo & Ayeni, 2022). Additionally, chatbots and virtual assistants provide 24/7 customer support, improving user experience and operational efficiency.

Agriculture: Artificial Intelligence (AI) is being used to optimize agricultural practices in Nigeria. Precision agriculture, which involves using Artificial Intelligence (AI) to analyse data from sensors and satellite imagery, helps farmers monitor crop health and manage resources more effectively. Artificial Intelligence (AI)-driven predictive analytics can forecast weather conditions, pest infestations, and crop yields, enabling farmers to make informed decisions (Afolayan & Okeke, 2021).

Healthcare: In the healthcare sector, Artificial Intelligence (AI) applications include diagnostic tools, treatment recommendations, and personalized medicine. Artificial Intelligence (AI) algorithms can

analyse medical images to assist in diagnosing diseases such as cancer at an early stage. Furthermore, Artificial Intelligence (AI)-powered platforms are used to manage patient data and streamline hospital operations, improving overall healthcare delivery (Adeyemi et al., 2021).

Retail and E-commerce: Artificial Intelligence (AI) is transforming retail and e-commerce by enhancing customer personalization and optimizing supply chain management. AI-driven recommendation systems analyse customer behaviour to suggest products, increasing sales and customer satisfaction. Additionally, Artificial Intelligence (AI) tools manage inventory and logistics, ensuring efficient stock management and timely deliveries (Eze & Ekwueme, 2021).

Energy Management: Artificial Intelligence (AI) applications in the energy sector include optimizing power grid operations and improving energy efficiency. Machine learning models predict energy consumption patterns, helping utility companies manage supply and demand more effectively. Artificial Intelligence (AI) is also used in renewable energy projects to analyse weather data and optimize the performance of solar and wind energy systems (Nnaji et al., 2022).

Telecommunications: Nigerian telecommunications companies are leveraging AI to enhance network management and customer service. Artificial Intelligence (AI) algorithms analyse network traffic to predict and mitigate potential outages, ensuring better service reliability. Moreover, AI-driven chatbots handle customer inquiries, reducing response times and improving user experience (Olusola & Akinyemi, 2022).

Conclusion

The article was aimed at exploring the prospect of effective and efficient artificial intelligence in businesses in Nigeria. Notwithstanding, businesses in Nigeria that have adopted the usage of AI have a competitive edge over competitors due to the fact that the potential benefits of AI are enormous and it enables business owners to make informed strategic and operational decisions, minimizes unforeseen business threats, enhance productivity, improve business forecasting, save money and allocate resources effectively and efficiently. Artificial Intelligence (AI) is growing rapidly in the field of business and other aspects of human endeavours. Nonetheless, businesses will also train and retrain their employees on how to use this revolutionary technology.

Recommendations

The following recommendations are suggested:

Business owners need to train and retrain their staff(s) in order to leverage the benefits of this technology.

Innovative research is needed for the use of Artificial intelligence (AI) technology in workplace management or corporate organisations.

Businesses in Nigeria will have to review their fundamental principles of work so as to enable them to focus on full cooperation between them and Artificial intelligence (AI).

The legislative arm of government saddled with the responsibility of enacting laws should make favourable policies that will encourage the adoption of Artificial intelligence (AI) by businesses in Nigeria.

There is a need for massive orientation on the potentials or prospects of AI in businesses in Nigeria.

References

Adebayo, O. (2021). Internet Connectivity in Nigeria: Challenges and Prospects. Journal of Digital Innovation, 15(3), 145-160.

Adedeji, F. (2021). Cultural Attitudes Towards AI in Nigeria. Social Science Journal, 14(1),50-67.

Adeyemi, D., Ayodele, O., & Ibrahim, M. (2021). Artificial Intelligence in NigerianHealthcare: Opportunities and Challenges. African Journal of Medical Sciences, 19(3), 120-135.

Afolayan, T., & Okeke, U. (2021). AI in Agriculture: Enhancing Productivity in Nigeria. Journal of Agricultural Innovation, 14(2), 90-105.

Ann, G. (2018). Current and future impact of Artificial intelligence on business. International journal of scientific & technology research 7(5) 2277-8616 116 ijstr©2018 www.ijstr.org

Anupama, P., Densy, J.V., Priyanka, S., & Bindhya, T. (2023). Role of Artificial intelligence and business decision making. International journal of advanced computer science and applications 14(6). www.ijacsa.thesai.org

Babalola, T. (2022). Economic Barriers to AI Adoption in Nigerian SMEs. Nigerian Business Review, 8(2), 34-50.

Bennett, & Coleman., (2023). Business definition. Retrieved from https://m.economictimes. com/definition/business/amp on 20/8/2023

Bhumika, D. (2021). 10 applications of Artificial intelligence (AI) in business. Retrieved from https://www.analyticssteps.com/blogs/10-applications-artificial-intelligence-ai business on 20/9/2023

Brynjolfsson, E. & Mcafee, A. (2014). The second machine age: work, progress, and prosperity in a time of brilliant technologies. New York, Ny: Ww Norton & Company.

Copeland, B.J. (2023). Artificial intelligence. Retrieved from https://www. britannica.com/technology/artificial-intelligence on 20/8/2022

Express computer (2017). Artificial intelligence transforming the future of work. Retrieved from https://search-proquest-com.nnu.idm.oclc.org/docview/ 1911103619?accountid=36492. On 19/8/2023

Eze, A., & Ekwueme, E. (2021). Transforming Retail and E-commerce with AI in Nigeria. Nigerian Journal of Business and Technology, 10(1), 45-60.

Jarrahi, M. (2018). Artificial intelligence and the future of work: human-AI symbiosis in organizational decision making. business horizons 61(4) 577-586.

Joao-Pierre, (2017). 6 examples of AI in business intelligence applications. Retrieved from https://www.techemergence.com/ai-in-business-intelligence-applications/ on 18/9/2023

Maggie, W. (2022). Efficiency versus effectiveness. Retrieved from https://www.google. com/amp/s/www.betterup.com/blog/efficiency-vs-effectiveness%3fhs_amp=trueon 19/9/2023

Ndukwe, N. (2021). Regulating Artificial Intelligence in Nigeria: Challenges andOpportunities. Law and Technology Review, 9(2), 200-215.

Nnaji, C., Ogunleye, T., & Uche, C. (2022). Optimizing Energy Management in Nigeria with AI. Energy Policy Journal, 25(4), 300-315.

Palanivelu, T.G., & Vasanthi, G. (2020). Role of Artificial intelligence in business transformation. International journal of advanced science and technology 29(4) 392

Rahul, J. (2023). The impact of Artificial intelligence on business: opportunities and challenges. Retrieved from https://ssrn.com/abstract=4407114 on 19/8/2023

Reagan, P & Robinson, J. (2018). Industrial technology of education. Direct research journal on engineering and information technology 5(5)36-46

Ojo, A. & Ayeni, S. (2022). AI-Driven Fraud Detection in Nigerian Financial Services. Journal of Finance and Technology, 17(1), 55-70.

Oke, A. & Fernandes, R. (2020). Bridging the Skill Gap: AI Talent Development in Nigeria. African Journal of Education and Technology, 12(4), 78-92.

Okeke, C. (2021). Data Privacy and Security in the Age of AI: Nigerian Perspectives. Journal of Cybersecurity, 6(1), 110-125.

Olusola, F. & Akinyemi, T. (2022). AI in Telecommunications: Enhancing Network Efficiency in Nigeria. Journal of Telecom Innovation, 11(2), 78-93.