Application of Artificial Intelligence in Contemporary Business: An Analysis for Content Management System Optimization

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ABSTRACT

Modern business is vital to finance, and AI has revolutionized the modern industry. Automation of many business operations has raised global concerns and alarms. Current business and related jobs are rising dramatically as the global population grows. Business administrators' conventional methods could be more efficient for these needs. These new tactics properly manage business products and services so industry persons may use technology to boost profits. It has protected harvest yield from environmental changes, overpopulation, changing business demands, and food safety challenges. Artificial intelligence can promote intelligent production methods to reduce loss and increase returns. Using artificial intelligence platforms, one can collect a considerable amount of data from government and public sites or real-time monitoring and collection of different data using IoT (Internet of Things) and then use it to empower business people to solve all their business problems. This research helps business people worldwide improve their business techniques. This paper uses the waterfall technique to develop and build an intelligent system by sequentially collecting data, analyzing requirements, planning, coding, testing, and implementing. This system can also generate ideas for managing common challenges in farm information systems, improving policy programs, augmentation and analysis, and managing production data. Finally, management information systems are analyzed, and suggestions for further development are made.

Key words: Artificial Intelligence, CMS Optimization, Contemporary Business Environment, MIS

INTRODUCTION

According to the Food and Agriculture Organization of the United Nations (FAO, 2017), the global population is projected to reach ten billion by the year 2050, which would catapult the need for modern businesses in a position of rapid development by somewhere about fifty percent in comparison to the numbers in 2013. Surprisingly, although lagging in the digital aspect, the modern business world has witnessed quite a momentum in the development and commercialization of technology in today's business scene. AI has just begun to play a significant role in people's day-to-day lives, which has increased the understanding of and capability for influencing the climate.

Artificial intelligence (AI) has the potential to be employed in various fields, and it also can bring about a shift in perspective on how we view farming and modern business today. Intelligent systems powered by AI will make it possible for businesspeople to accomplish more with fewer resources and improve the overall quality of crops and ensure that they are brought to market more quickly. The recent innovations and advancements in artificial intelligence (AI), big data, and the Internet of Things (IoT) are becoming a crucial drivers for providing digital information technology solutions in every industry and business sector. In the same vein, it is proposed to use these digital solutions supplemented by Artificial intelligence to inspire the natural surroundings of the crushed businessman community while offering yet another chance to business and business visionaries by presenting dazzling intelligent systems as a service. In this way, the natural surroundings of the crushed businessman community might be revitalized.

Individuals no longer have to rely on books and reports because the information technology on the Internet does command jobs today. As a result of this, individuals have

more time on their hands. In addition, the material disseminated in books and publications usually needs to reflect the current position of art, which is essential in a world filled with competition. The current situation can be improved by maintaining an AI-enabled company information system and making that system's data available via the Internet. Because of this, academics, investors, and, most importantly, businesspeople can improve their productivity while increasing their earnings. This paper describes the design and development of an intelligent business information system that can be a possible response to the challenges experienced by local merchants anywhere in the world - making it more proficient and more straightforward for them to deal with their crops. This system aims to provide a solution for the problems that are faced by local businessmen everywhere in the world. This article also analyzes some of the fundamental areas depicted in Figure 1 as places where the use of AI will likely increase the manageability of modern businesses. It focuses finally on the tools that may be used to achieve this goal specifically for local merchants, and it makes suggestions for potential future directions.

Literature Review

In one of the earliest studies, the authors unveiled the business systems explicitly built for Malaysian businesspeople who owned small-scale farms. They assigned business people the tasks of makers, producers, and communicators and made the function of businessmen an essential component of the system. The participants in the system were exchanging a significant amount of data with one another, and businesspeople, in particular, were active in distributing innovative knowledge and technology.

After that, Ortiz began implementing a business information and data management system and investigated the propagation of connected pest-related data across Peru's research sector, augmentation, and potato producers. An intelligence-based approach to pest management is an innovation that business people require. According to Silerov and Lang (2006), the administration of such different types of information allowed businesspeople to understand the novel criteria of intelligent pest control. Then again, in 2006, a study called Fadziso (2017) discovered how internet-based social media networks function as critical resources for individuals and families in the provincial areas of non-industrial countries and how this impacts their overall access to data and advantages obtained from that research and development processes. Finally, they presented a contextual analysis of the networks in a town. They brought attention to the demand that permitted the skillful execution of services and research involvements on a smaller scale.

Recently, there have been a few study studies that have been conducted on the application of digital data management systems and technologies that are used in business as well as in the food industry. For example, Silerov and Lang (2006) discussed applying the techniques and expanding the entries in the commercial sphere. Internet access to the data and the successful administration and organization of business processes are made possible by the development of these digital information systems and the construction of an infrastructure that is enabled by artificial intelligence (AI). In addition, Kucera and Lateckova (2006) also discussed the relevance of data systems to the arrangements made about computer programming and expert techniques utilized in the contemporary commercial and food domains. These intelligent management solutions offer assistance with decision-making and contribute valuable insights to the administration of business dynamics.

Research Methodology

This section demonstrates the development process and technique followed by these intelligent information systems, which are vital for the revolution in business. The approaches utilized in this article were derived from a study that focused on business services and businesspeople's general problems. It is recommended that the information be gathered by getting direct input from organizations and relevant reports addressing the issue. The following procedures that should be carried out for the data processing stage are verification and confirmation. These methods should be carried out in that order.

The procedures are carried out to determine the component nature of the information and the precise data to guarantee that the information is being utilized per the system data standard. When that is done, the phase of developing a database is over, and you can use any relational database. The database contains every piece of information that has been checked for accuracy. The most crucial phase in developing an online database for the current business community is implementing these information services. With standard web browsers, users can access the services this online business information system provides whenever and whenever they choose.

Because it will be necessary for knowledgeable individuals at specific research institutions to keep the database up to date, the system provides straightforward access to the database so that a diverse range of data manipulation and control may be carried out. Implementing a password to update the data set helps to secure the data set's security. This password will be distributed to the primary research organizations. This information system also gives the external user the capability to obtain compressed data in the necessary data type or format. This may be done for certain crop kinds for any given year, providing businesspeople in-depth

insights into their historical and present performance outcomes. This allows them to adjust the expenses and various factors of their company system in a manner that is appropriate for the new data.

DATA-ORIENTED MODERN BUSINESS – BUSINESS 4.0

When traditional information management was combined with modern business ideology focused on precision to improve process accuracy, a new way of thinking based entirely on business information emerged (CEMA, 2019). Accordingly, business 4.0 relies on modern business standards, with businesspeople employing information media to produce farm data and then being trained to make proper, strategic, and operational decisions. Most business people visit their fields to monitor and analyze the situation before making choices. However, due to several factors, few areas are spread out enough to monitor efficiency, ecology, and accessibility adequately.

Smart farming is becoming possible with intelligent information systems. Even if some businesspeople have a lot of expertise, technology may outperform them and systematically uncover potential concerns that are hard to see on personal visits. However, new business people's willingness to embrace modern devices in modern business shows a more positive outlook than previous ones. They can support their not-so-big involvement in the field with the latest technology and intelligent tools that provide essential information through innovative systems. Renewing, accessing early funding, advancing, consulting, and learning requires some solutions (European Commission, 2012). Renewal in a business advancement setting involves engaging a new group of highly talented and unique businessmen to use emerging technology (Artificial Intelligence, Internet of Things, etc.) to support business people's manageable practices. Thus, this idea suggests that new business people should change the current land to modernized and competitive farms to maintain suitable business production for improving business food chain sustainability. With cutting-edge innovations and modern practices, business people can enhance the space.

Evolution of Business 5.0

Game-changing innovations usually surpass huge engineering hurdles, and the 21st century's business 4.0 to business 5.0 progression is likely. According to the theory, businesspeople should combine hardware with automated processes and autonomous systems to make informed decisions. Drones, robots, and other AI are implied. So farms typically need many people to maintain operations, especially during harvest season. However, the globe is shifting away from a business landscape, with many people living on farms and in urban settlements. Therefore, farmers are facing a labor force deficit.

Developing AI-enabled corporate robots may solve the labor shortage problem. Business robots increase labor supply and harvest crops faster and more efficiently than humans. Even though business robots can be as fast as humans, revolutionaries are creating automated frameworks to help business people with monotonous field work and encourage them to adopt Business 5.0.

As mentioned, autonomous business applications are rapidly evolving, offering attractive solutions for farming's staff scarcity and productivity decline. Adapting to these developing technologies takes a lot of work, as with other technology. Due to financial factors, these approaches are expensive for most business people, especially those with small farms. With daily advances, this costs less. To increase output, autonomous business activities will be done afterward. Modern business uses robotics to overcome problems and meet the need for significant earnings without constantly monitoring fields and inventory.

APPLICATIONS OF AI IN INTELLIGENT MODERN BUSINESS SYSTEMS

Business production systems need help to adjust to rapid water, climate, and labor workforce changes in rural and business settings. Thus, local and provincial management strategies are required to assist business people and intelligent farming. Modern company can solve these issues with AI-based technology.

System Adaptation: Labor unavailability and environmental vulnerability reduce productivity and increase farm management expenses, placing pressure on already low earnings and output loss. AI is being used in business management but not precision farming. Adapting to AI advances and developing new leadership and animal production methods will help farms and the resources they use to succeed and manage.

Business Data Integration: Reconciliation and information management from climate, water, soil, environment, vegetation, animal health, phylogenetics, satellite photos, financial, demographic, and labor sources are needed to create an overall System of Systems (SoS). New integration components should leverage modern ontologies, data storage, cloud computing frameworks, and other technologies. In addition, the integration method must consider research network information standards and significant agent security and protection concerns.

Controlled Automation: Autonomous robots, drones, and other detecting gadgets can continuously collect data on agricultural progress, disease and pest detection, water levels, and animal health. Specialized robots can do jobs. Successfully coupling automation with AI requires identifying the factors to be checked, choosing the sensor(s) to use (e.g.,

automated pictures taken by robots, IR sensors integrated into robots), identifying adaptive activities (e.g., applying treatment, extra watering, crop harvesting, supply feed), and training mechanical systems to perform the assigned activities automatically.

Image-based Insight: Precision farming may be the most discussed business topic today. Drone photos can aid field research, crop tracking, and analysis. Businesspeople can speed up with computer vision, IoT, and robot data. Drone images can notify farmers to speed up precision farming. Business drones gradually use the IBM Watson IoT Platform and Visual Recognition APIs for picture processing. This could revolutionize real-time data collection and intelligent decision-making.

Role of Automation in Management Systems

Any area must grow. Automation breakthroughs required modern businesses to adapt. Embedded intelligence (EI) research grew. Smart farming, crop management, water systems, and greenhouses are embedded intelligence in contemporary business (Mandapuram, 2016). As many sectors depend on modern commerce, a nation must keep these advances in mind to develop. A Technology Roadmap (TRM) from many studies succinctly provides second views on current business domains like intelligent farming, innovative water systems, and so on.

Experts created a grape disease prediction system considering modern businesses' social and financial imperatives. The grape plant only showed disease after infection, hurting the entire plantation. The grape plantation used temperature, leaf wetness, and humidity sensors. These sensors deliver data to a wireless server's database. Any Wireless System Network (WSN) solution must meet worldwide standards. This algorithm prepares sensor data and sends SMS alerts for temperature, humidity, and leaf wetness deviations that can cause grape disease. The Internet of Things must be used to increase corporate automation to improve efficacy, utility, human inference, time, and cost. For example, IoT devices transfer data without human intervention. Thus, IoT and current business enable intelligent, automated farming to achieve excellent proficiency.

This system uses sophisticated GPS-based remote-controlled robots for weeding, spraying, humidity detection, bird and animal alarm, and alertness. It also has an intelligent water system with continuous field data-based control. Intelligent inventory management includes warehouse temperature, humidity, and theft detection. This load of actions will be controlled by any distant smart gadget or Internet-linked computer and done by connected sensors.

Challenges in AI-based Business Systems

Because they can provide site-specific, integrated, and networked tools, intelligent and expert systems are gadgets used for company management. Even though artificial intelligence has recently achieved some noteworthy advances in the business sector, much more work needs to be done to improve company activities utilizing AI because its performance has many restrictions.

Timing of the Response and Accuracy: The capability of an intelligent or expert system to carry out tasks accurately in a relatively short time is an essential aspect of that type of system. The vast majority of these systems need to catch up in terms of time, precision, or even both parts. For example, a delay can influence a user's choice of task procedure in the system. For instance, people interested in reducing the effort they put in while increasing their precision level can select one of the following three methodologies: automated performance, pacing, or monitoring.

Adaptability: Any powerful artificial intelligence system should have high adaptability. Significant progress has been made in applying AI approaches to various activities; nonetheless, the key topic at the leading edge of AI-based technologies is interfacing the multiple subsystems into a unified setting. To accommodate this, the actual subsystems need to be flexible. In addition, it must have comprehensive capabilities to adapt to additional helpful information from the industry professional.

Massive Data Required: It is also possible to gauge the efficacy of an expert system based on the amount of data it has access to. A consistent artificial intelligence system requires significant information to function correctly. A sizeable portion of the incoming data ought to be excluded from consideration by the system. A domain master must provide in-depth information on the system's task. Without a doubt, essential information should be utilized to increase the response time and accuracy of the system. For example, the development of a business expert system calls for the collaboration of specialists in a variety of subfields of contemporary business, and it needs to be conceived with the participation of the creators of the products that will use the system.

Various Models for Business Services

Intelligent Chatbots: Retail, tourism, media, and other industries use AI-controlled chatbots (virtual agents). However, modern companies could leverage this technology to help businesspeople solve specific problems. Brilliant voice chat in local

languages answers business people's questions. Supervised and reinforced AI algorithms power the chatbot engine's context-specific learning. Before allowing human intervention for only questions, the chatbot answers most non-specific questions.

Agri-E-Calculator: The agri-e-calculator helps business people choose the best crop and make cost-effective decisions. Smart e-calculators let entrepreneurs choose the best product for the farm's cheapest location. Then, the e-calculator identifies and assesses any remaining information sources. This outcome helps evaluate fertilizers, water, seeds, and development equipment for better financial decisions.

Crop Care: The crop care concept goes from seed planting to harvesting. Artificial Intelligence algorithms analyze complex organized data from IoT sensors in the fields and domain expert reviews. After reviewing all information, PID regulator system inferences are usually made. Business people are informed on their cellphones to rank activities by urgency and seriousness.

Market Analysis, Price Prediction: This methodology helps business people analyze and avoid volatility and value loss. Business people receive accurate price and demand data during the harvest due to the collected data. Businesspeople can also create viable product delivery methods.

CONCLUSION

The commercial sector has a variety of challenges, such as the need for adequate water systems, issues resulting from crop growth, and shifting environmental circumstances. Even so, this execution can be improved with the help of innovation, and as a result, the problems can be solved. A variety of strategies supported by artificial intelligence, such as remote sensors, commerce management systems, and autonomous water systems, will be utilized to solve these issues. Most of the difficulties that entrepreneurs encountered were caused by the fact that conventional practices tended to obscure the fact that large yields were being lost during the harvesting cycle. Not only do these self-driving robots make the process more successful, but they also reduce the number of necessary pesticides. In addition, entrepreneurs will be able to spray insecticides profitably with the assistance of robots powered by the Internet of Things (IoT) and sophisticated sensors, and the process of crop analysis will no longer be cumbersome. The first step is to address the shortages of resources and jobs by using the capabilities of artificial intelligence to address problems businesses face. The conventional approaches called for significant time and effort to be invested in accomplishing anything, resulting in tedious manual testing. With the help of the various methods and models discussed in this article, quick and effective high-level business operations would be possible, along with the potential advantage of flexible and helpful advancement, on-demand access to data, and spatial aims. As a result, the commercial landscape may have a prosperous future if it can successfully adopt new technologies and maintain its current pace.

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