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Artificial Intelligence Applications That Support: Business Organizations and E-Government in Administrative Decision

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A B S T R A C T

There are various generations of decision support systems related to the field of artificial intelligence, and this research paper deals with studying and analyzing the most important applications, tools, and techniques thereof in modern business organizations and e-government. Analyzing and discussing intelligent decision support systems such as neural network systems and technologies, fuzzy logic systems, genetic algorithms, and systems the expert. Study objectives: The main objective of this study is to try to identify and study the applications of artificial intelligence in support of administrative decisions, by achieving the following objectives, defining the concept of the field of artificial intelligence, and the relative importance of each of its components that it includes; Determine the modus operandi of the most prominent known applications of artificial intelligence in solving problems; Define the architecture and structure of AI applications (neural network systems and technologies, fuzzy logic systems, genetic algorithms, and expert systems); Determine the benefits offered by artificial intelligence applications when used. Study structure: Based on the study problem, its objectives, and its importance, the elements of the study can be identified as follows: The first topic: Analyzing the concept of artificial intelligence; the second topic: studying the applications of artificial intelligence in support of administrative decisions in business organizations and e-government. The Approach: The inductive approach was used, through extrapolation and analysis of studies, research, books, and periodicals related to the field of study, to identify the theoretical basis for applications of artificial intelligence in support of administrative decisions in business organizations and e-government

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Introduction

Analyzing the concept of artificial intelligence In this topic, some concepts of artificial intelligence and the most important reasons that invited business organizations and electronic governments to pay attention to it will be presented, then the family of artificial intelligence will be addressed, and after that, the most important characteristics of it will be formulated(Kaya, 2019; Siskos et al., 2014).

The concept of artificial intelligence: Known according to the Intelligence Dictionary, the term artificial intelligence consists of the words "intelligence" and "artificial", so the word intelligence As the ability to understand new or transforming conditions or situations, or, in a more comprehensive definition, intelligence means the ability to perceive, understand and learn new cases or conditions(Reis et al., 2019). That is, the keys to intelligence are perception, understanding, and learning, as for the word artificial, which is related to artificiality, and thus the word is applied to all things that arise as a result of taxonomic activity or action, to be distinguished from things or natural phenomena that already exist and have no direct relationship to human intervention. On this basis, artificial intelligence generally means the intelligence that a person creates in a machine or computer. It is the intelligence that comes from a person originally, and then gives or donates it to the machine or the computer system Artificial Intelligence as: "The field of computer science interested in designing computer systems, Barr and Feigenbaum, defines all who are intelligent, computer systems that display the characteristics of intelligence in human behavior."(Davenport & Ronanki, 2018; Kruse et al., 2019; Qureshi et al., 2014) Artificial Intelligence is(Dick, 2019): “The science that enables machines to implement things that require intelligence if they are implemented by Minsky and it is known which took place in 1956. Artificial intelligence has been defined as:“ the field of study of the dart-mouth before man ”, and the (Minsky) conference was related to a review of Machine intelligence, and this includes the ability to think, learn, understand, and apply to mean. "Through the previous concepts, it can be said that artificial intelligence is a science and technology-based on fields such as mathematics, linguistics, psychology, computer science, and computer science. Reality represents the product of the achievements of the human mind, the product of human civilization. Engineering, geometry, mathematics, every time, anywhere.

According to (Jarrahi, 2018; Sandkuhl, 2019)The interest of business organizations, especially in industrial intelligence, is attributed to the following reasons creating a knowledge base that supports the organizational memory so that workers can refer to it in obtaining knowledge and learning experimental rules that are not available in books and documents Store knowledge related to artificial intelligence for fear of loss or leakage due to employee turnover, resignation, or death; Establishing a mechanism that is not subject to human feelings such as anxiety, fatigue or exhaustion, especially in organizations where work is characterized by fatigue and danger; Possessing successful tools in their crisis management applications; Generating successful solutions to complex problems enriches the knowledge base and enhances organizational memory that enables it to analyze and process problems in a timely and required manner;

The family of artificial intelligence includes various major applications such as natural language processing, expert systems, networks (neural, fuzzy) logic (Lu et al., 2018; Mehtab & Sen, 2019), use of

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cases, and the intelligent agent Many other types of applications in the fields of science can be listed. And technology, especially since the technological innovation rings in the field of artificial intelligence are renewable and open to development and creativity, and for this reason, what has been termed as the family of artificial intelligence means a set of current and new applications in different practical and theoretical fields and it does not mean at all specific and fixed fields. Accordingly, the artificial intelligence family can be shown

The fields of application of artificial intelligence, as shown in the previous figure, include applications of computer science at the level of hardware and software, in particular, the hardware and programs of the fifth generation, hardware, and programs of parallel processing, parallel dense, and symbolic processing to applications of artificial intelligence in the biological field, psychology, mathematics, and fields Others are interested in the structure and functions of the brain and its original capabilities in thinking, learning, inferring, storing and processing information and knowledge (Silva Araújo et al., 2019),

These fields also include the use of artificial intelligence in linguistics, the design of interfaces, and the creation of virtual (or imaginary) reality, as well as efforts to integrate intelligence into the machine and improve its performance to converge intelligent behavior in human performance and its response to changes in conditions that require adaptation and modernization. The various applied aspects deal with aspects of behavior or intelligent perception and thus share their representation of the characteristics of this behavior(Junio Guimarães et al., 2019). However, the difference between them is the degree of their intelligent expression and the level of their representation of protective behavior in terms of perception and action.

The most important characteristics of AI are the following (Turban et al., 2017)

Thinking and perceiving; Using intelligence to solve problems; Learning or understanding from experience; Knowledge acquisition and application; Display creativity and imagination; Dealing with complex situations; Rapid and successful response to new situations and circumstances; Distinguish the relative importance of the elements of the case or circumstance; Dealing with incomplete and ambiguous information; Support administrative decisions.

a study of artificial intelligence applications in support of administrative decisions in business organizations: It is not possible to study and analyze all areas of the application of artificial intelligence in management processes and activities, or the business environment in a form In general and electronic business in particular, it is possible to study the most important artificial intelligence systems used To support administrative decisions through the type of reference you provide to the decision-maker, the level of decision that supports him, and the nature of the field Appropriate application, and this is what we will find in this axis(Kaya, 2019).

MATERIALS AND METHODS

First: neural network systems.

Definition of neural networks:

They are data-erasing systems designed to model the structure of the brain and simulate how it functions. However, the erasing neural network is much easier than the architecture of the brain and the structure of the neuron itself. The brain contains 1011 or 100 billion cells, i.e. about 1015, Synaptique

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Junction neurons work in parallel. And each cell has connections to about 104 connections for the whole brain, in other words, it represents a dynamic, feedback-fed system, densely parallel and non-linear Quadrillion Synapses(Bejarbaneh et al., 2018).

However, neural networks try to function in the same way as the brain does, and through (Elsheikh et al., 2019). the internal connection of processors that work in parallel and interact in a dynamic way between the patterns and relationships present in the data that they process, meaning that they learn to distinguish what. You receive it from data and benefit from the largest amount of knowledge to implement several attempts on the same data, and neural networks learn through mathematical and statistical techniques how to distinguish patterns and relationships, but without these networks being based on mathematical or statistical models. That is, the statistical estimates of these networks do not work according to a model that shows how the outputs depend on the inputs because they are estimates devoid of the model (Fei & Wang, 2019). Therefore, it can be said that neural networks are dynamic information systems that are formed and programmed throughout the development period allocated for training and learning. That is, they are systems that learn from experience and gain their experiences and knowledge through training and learning by practice, just as neural networks are linked to the field of artificial intelligence, but the studies and applications of networks have formed a tributary distinct from other artificial intelligence systems, especially the expert systems, as the distinction between them will be seen later. (Hou et al., 2019)Networks are based on the idea of creating intelligence and learning capabilities in computer systems and tend to use symbols in solving (Alter, problems through the process of learning and self-adaptation to conditions and variables subject to examination, analysis and study 2002, and today computerized neural networks are used in various fields of business, money and industry services and trade, in particular, neural networks are widely used to support financial and banking decisions,

Analyze and manage an investment portfolio, forecast stock, and bond prices and forecast currency exchange rates, as they flourish

Applications of computed neural networks in the field of operations management, to solve logistical problems and support control decisions And control ... etc.

Neural Networks Architecture:

By according (Khan et al., 2020)Techniques of working neural networks: that use symbols in Parallel Distributed Processing Neural networks work according to parallel processing logic, solving problems through the process of learning and updating, and they also work in the method of parallel processing intensive and distributed applications Artificial complex and large. The structure of the erased neural network consists of several artificial neurons, each neuron consists of the following elements, as shown in the following figure (2):

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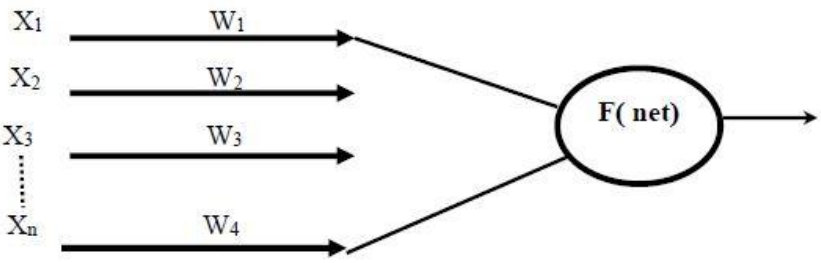

Source: Alter S. (2002). Information Systems: The Foundation Of E-Business. New York, Prentice-Hall, USA, P. 340.

Figure (2)

From Figure (2) above, it is clear that the components of the neural network include:
-Input signals, xi. Input signals They are data elements that come from the external environment or the activity of other neurons
- An activation level- wixi , Given activation Connection weight the activation level determines the accumulated strength of its input signals through the correlation weight of the input component.
-Outputs of the nerve cell: Located in the nerve cell. (F.) is obtained and is obtained in light of the final result computed by the functional function.
Concerning the way the neural network works, each element of the input represents a special signal. If the problem is the issuance of approval or disapproval of granting a bank loan, the feature is related to the monthly income, bank balance, or property ownership. As for the weights given, they express the strength of The relativity or mathematical value of the input data or of the different connections that transfer the data from one level to another (Khan et al., 2020)At the level of activation, there is an aggregate function that represents and sums the products of multiplication (Wi) in its weight (Xi) the weighted sum of all the elements of the input. The aggregate function multiplies each input value (Y) to obtain a weighted total and takes the formula for several inputs in one operating element:

$$\mathbf{Y= \sum Xiwi}$$

Take the following formula: (j) and many cells

$$\mathbf{Xi= \sum Xiwji}$$

Neural Network Architecture
There are three architectural patterns for neural networks, as shown in Figure (3) below:

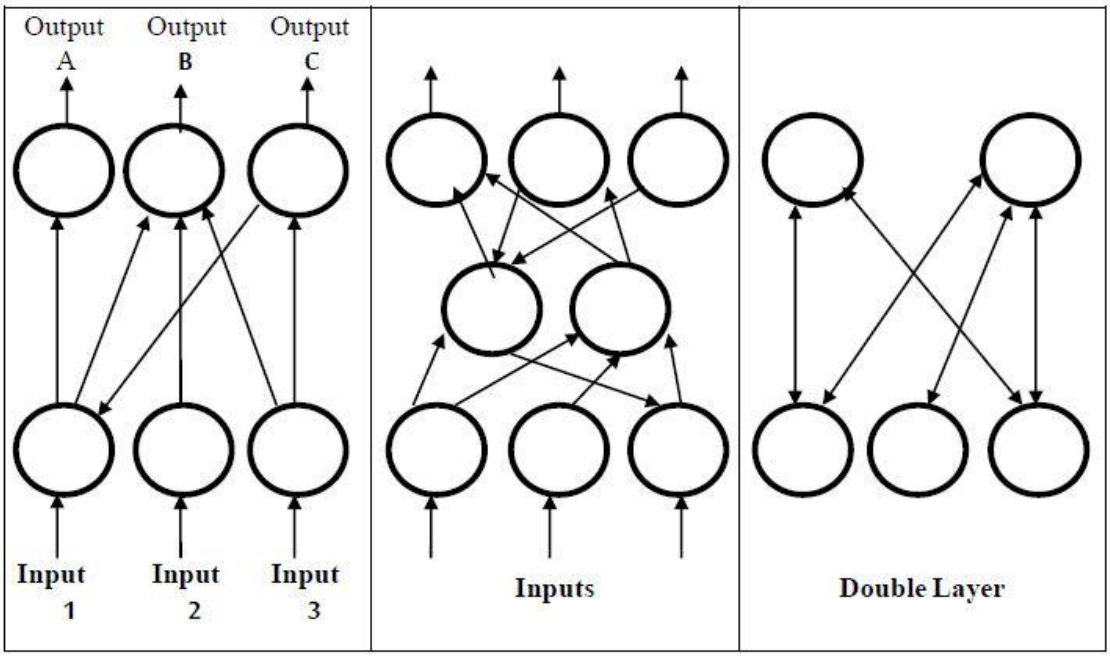

Figure 3

From the previous figure, it is clear that the architectural patterns of neural networks include:

Associative Memory:

They are patterns based on a technique that states complete situations and partial information by linking the input data with stored information in the memory.

Hidden Layer:

It is a pattern consisting of one or more hidden levels between cells for input and output and a large number of weights. Neural networks for business applications comprise three and sometimes 4 or 5 levels, each containing some levels of Playback items from 100 to 1000 playback items.

A heck of self-replay:

This network is described as dual-level and uses forward feedback and backward feedback approach in tuning Parameters when analyzing data and for determining arbitrary numbers of categories that represent the data presented to the network. It can adjust Parameters for determining network sensitivity and producing significant classes**.**

Advantages of using neural networks:

The advantages of using computed neural networks can be summarized as being extremely useful for pattern recognition and learning Classification, generalization, abstraction, and interpretation of incomplete inputs, and the possibility of using neural network techniques to solve problems that are difficult to simulate or that are not solved by expert systems or other typical techniques. for example, A computed neural network can analyze large amounts of data to create patterns and features for phenomena or situations Where the rules are known. (Nishida et al., 2017; Rocco et al., 2017) Therefore, neural networks are useful in current applications such as stock oscillometry To make a decision regarding determining the components of an appropriate investment portfolio or forecasting foreign exchange rates, etc. . Of financial applications

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Secondly: Fuzzy Logic Systems:-

Definition of ambiguous logic:

Fuzzy (ambiguous) logic, which is also called ambiguous or fluid logic, is, above all, a particular method of perception that simulates Fuzzy is a method of human perception to estimate values and their associated references, through incomplete or fuzzy data Instead of relying on the even numerical classification (Yes, No) the fuzzy logic tends to use several classifications, Data (A possibility between the word yes and the word no) (Olivas et al., 2017; Soto-Hidalgo et al., 2018) Hence, it can be said that the fuzzy, ambiguous logic is a form or frame of perception and thinking that makes it possible to relate fuzzy states Similarly to the multi-grade descriptive category styles we use.

The idea was Berkeley Professor at Lotfi Zadeh. The term first appeared in the year 1964 when it was coined before. The key is to accomplish thinking by relating the rules of cases in light of the conditions that are subject to change. Where the use of logic (Alter, Mysterious) The erasure is used to express the phenomena for what they are and in light of the process of the phenomenon that is constantly changing(Y. Chen & Wang, 2017) In the world in which we live, we cannot assert that the events happening around us are true to a degree Absolute or false to the same degree, on the contrary, there is a degree of belief in the event, and the degree of belief is reflected in The event occurs in the language we use, so we always use maybe, possibly, and this situation is thus reflected in most Artificial Intelligence Systems and Technologies. Ambiguous logic appeared to replace the traditional computational logic that expresses phenomena with two signs (0,1) and to fill the need for Representing ambiguous terms that are usually found in natural languages, and therefore ambiguous logic is used in constructing systems And artificial intelligence techniques, including expert systems, to provide the technologies necessary for both the representation and perception of words or General terminology. The ambiguous words in fluid logic are represented quantitatively(Wagner & Hagras, 2010).

The computerized fuzzy logic systems used in various businesses and business applications of e-government are in themselves dynamic systems as the sample data is formed and programmed throughout the special time, in contrast to the statistical guesses. Fuzzy guessing function without a mathematical model showing how output depends on the input They are guesses and estimates Thus, we can train and teach them flexibly through Model-Free Estimates in Practical Experience at present, fuzzy logic techniques and systems are used with other integrated systems (Kosko, 1997, p. 13). It works with artificial intelligence technologies such as expert systems that work with fuzzy logic, and neural networks with fuzzy logic or Mysterious logic networks in the most important areas of business, especially in financial and banking applications, such as forecasting the expected return From securities, risk management, liquidity planning, and investment portfolio management to other applications the mission(Azar, 2012).

fuzzy logic and neural networks:

It is self-evident to say that the world in which we live does not tolerate deterministic options such as thought and matter, black and white, water And fire, form and content, pronunciation and meaning ... etc. That is, it cannot tolerate the sharp, categorical logic that separates things from one another The degree of dependence (or degree of likelihood) is also reflected in situations, decisions, and events in the natural language used Whether it is the Arabic language, an English language, or something else, a

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person may use it ... and possibly, and I think ... and this structure Probabilistic and even metaphorical linguistics are also reflected in neural networks and other AI systems ((S. X. Chen et al., 2013) If we take expert systems as an example, we note that the traditional way in which expert systems are used to manage Certainty factor is a numerical value (CF) as the uncertainty factor is called the confirmation factor method Specialize for the phrase that represents the degree of belief.

Based on the foregoing, it can be said that the appropriate approach to deal with the case of uncertainty and the non-decisive probabilistic logic in Neural networks, expert systems, and other AI systems is the need to represent ambiguous terms Or the fuzziness in a way that these systems can perceive and use. Therefore it uses fluid, vague or fuzzy logic(Murmu & Biswas, 2015).

Third: Genetic Algorithms.

Definition of genetic algorithms:

An important application of artificial intelligence in business is genetic algorithm technology that uses an image Extensive research in searching for the best solutions and alternatives among the available solutions and alternatives. (Kramer, 2017) It is an artificial intelligence erasing technology Computerized that uses the methodology of evolution and conflict to arrive at the optimal solution in the same way that genes arise and evolve. Mutation and what is known as the term genetic combination, as well as what is known as genetic correlation is used, for example, this is. Evolution of design based on concepts of natural selection by natural selection the terms and others are taken from the concepts of the evolutionary theory presented by Charles Darwin in his book On the Origin of Species. Here, he notes how computer science and its applications in information technology take refuge in the science of biology, that is, how the materials escape(Grefenstette, 2013).

How genetic algorithms work:

The genetic algorithm technology is based on a practical idea of a spoofing program in which possible solutions (or alternatives) to a decision compete with Each other. It is through evolutionary struggle that survival is the best (optimal) solution that remains standing in this (Kramer, 2017). The Evolutionary Struggle for Survival (481 Systems genetic algorithms have been developed to design and propose solutions to problems that deal with multiple candidates and influencing variables such as The existence of some loan candidates and the presence of tens or possibly hundreds of factors that must be weighed and estimated as a basis for comparison between These candidates. Genetic algorithm techniques are also used in the fields of finance and banking businesses and applications Investment is also used to solve problems of logistical operations and control the movement of materials (Kramer, 2017)It is applied in various types of modern technologies including space technology, materials, and biotechnology.

Fourth: Expert Systems.

Definition of expert systems:

The Expert System with Easy Initials is a computer program designed to model the human expert's ability to solve problems (Allahverdi, 2014)In other words, the expert system is based on the knowledge of the expert, the thinking and perception of the expert or his method in Implicate and understands things.

From the point of view that expert systems are penetrating the market and society, there is a delicate

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balance between those who believe in technology Expert systems and traditions who remain skeptical about the merits of expert systems, as we enter the age of knowledge, it is clear that Knowledge organizations, knowledge management and knowledge technology will depend on expert and knowledge-based systems, and will be These systems are integral to making global organizations competitive and applicable in the international environment, and early work began in Expert systems were developed in the 1950s by a group of thinkers, and in the 1970s the largest industrial interests were developed Expert systems continue throughout the day, and experts use expert systems in application areas such as: diagnostics, visualization, Teaching method, learning, playing, programming, demonstrating the pattern of speech recognition, and indicating that artificial intelligence and its expert systems It has reached a level of maturity, especially in recent years, and has developed to the point that knowledge on the basis of expert systems may reach To a level of performance similar to an expert in specialized fields such as: computer systems, computing, education and engineering, Knowledge engineering, geology, medicine and science, also expert systems have high performance in solving (software) problems . (Allahverdi, 2014)- A computer capable of simulating human experience in a narrow field (556 Some experts argue that expert systems will change the way business is done by changing the way people think of a solution to Marvin (MIT) problems. From the beginning, scientists had had great hopes for expert systems, as the informatics professor had previously said In the year 1970: "In three to eight years we will have a machine with general intelligence representing the average human intelligence Minsky ordinary. I mean a machine that can read and understand Shakespeare's plays, drives a car, for example, and also plays and jokes.

For the expert system to achieve this target level of intelligence, the system must have both a base The knowledge base contains the knowledge. The Inference Engine and the Knowledge Base inference machine are Specialized in the field of accumulated experience that is prepared by the expert or group of experts. This includes specialist knowledge on Inference As for Machine Inference, Relationships and Relationships, Concepts, Rules, Facts, and Facts It is a knowledge processing that compares the information available about a given problem with the knowledge stored in the knowledge base Engine And derives useful conclusions and recommendations. In addition to the knowledge base and heuristics machine, an expert system needs to be in place. (Kramer, 2017). The interface, the structural unit that provides facilities for interpretation (326 Currently, expert, high-tech systems can generate innovative ideas and practical solutions For difficult and complex problems, moreover, expert systems are used, such as documenting human knowledge and experience and supporting operations Semi- and non-structural decision-making (semi and non-programmed).

Benefits provided by expert systems to the organization:

The benefits provided by expert systems for the organization can be summarized as follows

Ensuring the highest level of objectivity and reliability in decision-making; Ensuring impartiality, rationality, and detachment from feelings, emotions, tendencies, and psychological conditions when making important decisions; Expert systems are used every time you ask and everywhere you ask; Provides support for non-structural and semi-structured decision-making processes; Automation of routine tasks performed by the humanitarian expert; Solve the problem of loss of knowledge accumulated by the humanitarian expert as a result of retirement, illness, leaving work, or death; The

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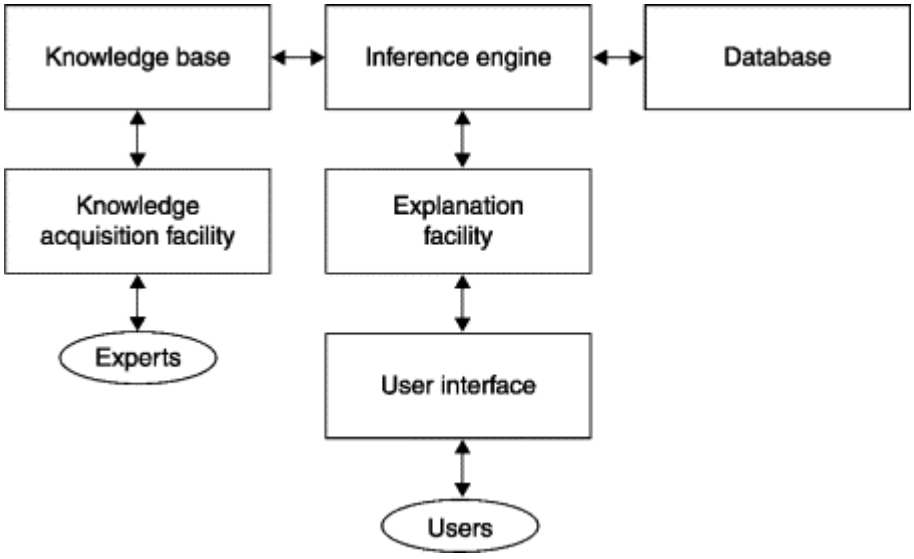
high price paid to achieve the qualitative accumulation of knowledge and practice of the expert in comparison with the expert system; An expert system does not need an adequate physical, social and psychological environment to operate efficiently and effectively.

Structure of the expert system

The expert system consists of an integrated package of subsystems (modular units) that are clearly shown in Figure 4



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Source by Z.X. Guo, W.K. Wong, in Optimizing Decision Making in the Apparel Supply Chain Using Artificial Intelligence (AI), 2013

We note from this figure that the expert system consists of specialized knowledge in a specific field They are stored in long-term memory. (Wong et al., 2013) Facts and information related to the problem in question are stored in a short-term memory It is called (working memory) just as the human expert does in dealing with the problem he faces in his field of competence The first thing that an expert does is to bring to life the experience and initial knowledge that he has without the need for deep thinking and causing Factors and outcomes. This is exactly what we mean in terms of concept and meaning by the short-term memory that is also present in the system 206- Al-Khabeer Al-erased (Allahverdi, 2014; Kramer, 2017; Nagori & Trivedi, 2014)But what an expert erasing system needs is a machine or mechanism for induction and logical reasoning using stored knowledge And the corresponding facts of the problem, the machine that makes inference and deduction and replaces the mechanism by which the mind operates The human being is what we call a tool or an inference machine that links the knowledge base (long-term memory) to the working memory (Short term).

From the previous figure, we conclude that the existence of the expert system requires the availability of subsystems, which we will briefly mention as follows:

Knowledge Base: It is a subsystem within the expert system that contains specialized knowledge in a specific field, and this knowledge is collected and derived Which begins with assimilating the Knowledge Engineer's knowledge from the expert and through the techniques used by the Knowledge Engineer The expert, deriving it from it, encoding it in a program, and storing it in the knowledge base

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of the system. The knowledge engineer uses standard methods The standard method for representing rules for representing knowledge and experience in a computer is the most important of which is: The method of representing knowledge using rules Frames are defined using frames

Working Memory: The working memory contains the facts about the problem in question. when the beneficiary or the decision-maker does a consultation with the expert system and inputs information about the problem into the working memory. The system undertakes the process of comparing and approximating this information With the knowledge contained in the system and in the knowledge base to infer new facts. After that, the system enters new facts into working memory as well as conclusions that embarrass the system that also enter working memory. Most expert systems make use of information produced by external storage media such as the databases where the system is based It downloads this information at the beginning of the search for solutions to a problem, or even during this process(Wong et al., 2013).

Inference Engine: The expert system models the process of human thinking and perception through a synthetic program called the inference machine an inference machine is a processor in the expert system that performs the function of mixing and comparing facts in the working memory with the specialized knowledge in the knowledge base to derive or draw conclusions and solutions. working Memory Related to the problem in question. Hence, it can be said that the inference machine works with the facts in working memory and the high-end specialized knowledge that Included in the knowledge base for deriving new information. The inference machine searches for rules that relate and converge between the introductions The logic and information about working memory, and when the machine succeeds in this matter it adds the conclusion that came out In it the base to the working memory while continuing to activate the other rules to search for a new connection and approach (Wong et al., 2013)

Explanation: The exceptional characteristic of expert systems is their ability to interpret thinking and perception, or interpret the recommended proposition or solution of the system. Therefore, for every system expert, there is a program for a modular unit called Interpretation and Explanation Facilities. Using this unit the expert system can provide a clear explanation and explanation to the user about why the system is asking questions and how he is ably reaching the conclusions presented to solve the problem. The Explanation and Interpretation Facilities Program provides important benefits to both the system development team on the one hand and the user or the user, On another hand, the system can use these capabilities to explain and clarify the errors Existing in the knowledge of the system as the beneficiary learns from the system by causing and inferring results.

User Interface: The interaction between the expert system and the benefactor takes place through natural language, and the interaction of the expert system is characterized by interactivity Simplicity and proximity to personal dialogue style. The interfaces are designed based on meeting the needs and requirements of the user in the first place. Therefore it is called the interface with the end-user. The main principle for interface design is to ask questions and acquire information from The beneficiary and directing personal guidance and warning signals to the user of the system in addition to the use of multiple elements such as Menus, Pictures, Shapes, Sounds, and Different Expression Styles.

Characteristics of Expert Systems

Expert systems have certain characteristics, the most important of which are listed below(Hossain et al.,

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2015)

A. Separation of knowledge from control: The separation of knowledge from control is a valuable property and advantage of an expert system over conventional software. At most Software notes that the blending of both knowledge and control on it. This means that changes that occur in the "code" affect theBoth knowledge and processing process. It is very difficult to "modify the software" while at the same time understanding the nature of the knowledge that was created Its use and its method of use.

B. Understand the expert's knowledge: The essential characteristic of the expert system is that it assimilates and stores the accumulated experience and knowledge of the human expert. Who makes An expert system is the success of an attempt to absorb human knowledge and experience and unload it into the crucible of the expert system, along with knowledge Basic skills related to knowledge and its practical uses are transferred to the expert system so that it can operate efficiently In the field of competence in which the expert works.

C. Focus on expertise: Most experts have sufficient problem-solving skills in a specific area of knowledge and practical experience. But they do have capabilities Limited outside this limited field of specialization, and this applies to expert systems as well

D. Thinking with icons: Expert systems display stored knowledge symbolically, and symbols can be used to express various patterns of knowledge Such as facts, concepts, and rules.

E. Exploratory perception: Exploratory perception is one of the most intrinsic properties of expert systems. Whereas experts derive rules from Their experiences and practical experiences and building a form of practical understanding of the problems they face through the use of exploratory bases Or what is known as an exploratory research method, expert systems use this technology to solve complex problems that have no solution Algorithmic, this and exploratory approach is a technique in investigating the problem and reviewing possible solutions.

F. Programming versus engineering knowledge: An inherent characteristic of conventional programming is the cascading treatment that anchors problem data while analysts care System designers are expert in problem knowledge. Problem-specific knowledge is acquired, organized, and studied to reach a deep understanding. For the problem in question, systems analysts call this process, in all its important dimensions, knowledge engineering, and then engineering Knowledge is the process that includes building an expert system or systems

Fifthly: Distinguish between expert systems and neural networks:

By (Lee & Choeh, 2014)Neural networks differ from expert systems in the content of the technology on which they are based, and in the dimensions, they are associated with, and in the systems, The expert is based on the technique of attracting, representing, and storing knowledge in a specific scientific or applied field, to be used after that Knowledge to support semi-structural and non-structural decisions. For the expert system to do this knowledge it must have a system that has essential components such as the knowledge base, the inference machine, working memory, interpretation facilities, and the interface. The essential characteristic of the expert system is in its assimilation and storage of the accumulated experience and knowledge of the human expert. The system at work is in the

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success of trying to absorb human knowledge and experience and unload it into the crucible of the expert system, and this requires it Both a field expert and a knowledge engineer are in place. Conversely, neural networks are not based on human knowledge modeling technology or human intelligence, nor do they seek programmed solutions also in doing so you do not need a field expert and knowledge engineer. Neural networks operate primarily on the placement technology Intelligence in computer hardware can, through software, provide solutions to complex and non-structural problems that are subject to large variables, Therefore, the capabilities of neural networks are described by the term layers of knowledge for their ability to cognitive analysis, as well as networks Neuropsychiatry does not require expert expertise and knowledge as it does expert systems that are based on expert capabilities to obtain Knowledge and its representation in the form of rules, for example. A neural network can be built without having specific knowledge in a specific field, rather A neural network needs user experience in estimating weights to hold input elements before and during network training and teaching (Egrioglu et al., 2013)On one hand, neural networks partner with expert systems and other fields of artificial intelligence using reasoning Symbolism, pattern recognition, learning, and focus on problems that do not respond to algorithmic solutions, which requires the search for solutions Exploratory used as a technique to solve artificial intelligence problems. An exploratory approach is a technique in investigating a problem and reviewing possible solutions outside the framework of algorithmic logic within Various entries that differ from one application to another. The interest in the exploratory approach was accompanied by the intensification of efforts and studies in the field Developing programming techniques that encode and process symbols and represent knowledge within the limits of what is known as fuzzy computational logic or The fluid has also been previously analyzed (Egrioglu et al., 2013) .

Finding and Results

As we found, the applications of artificial intelligence perform several functions, the most important of which are the following:

-1 production of useful knowledge;

2- Storage of methodological rules for dealing with stored knowledge;

3- Working on acquiring, updating, and maintaining accumulated human knowledge, and thus investing it in solving problems Administrative and, in particular, strategic problems;

4- Optimal investment of scientific and applied knowledge and expertise;

5- Activating the stored knowledge electronically and using it in making strategic decisions.

From this, we conclude that modern applications of information technologies are moving towards the use of artificial intelligence capabilities in various fields Basic support for management, in particular, non-traditional management decision-making processes. To get the most out of AI, the following recommendations can be made to start working with AI:

1- Apply the capabilities of artificial intelligence to the activities that have the greatest and immediate impact on revenues and costs;

2- Using artificial intelligence to enhance productivity with the same number of people, instead of getting rid of employees or Add a number of them;

3- An innovative expert with comprehensive business experience and a comprehensive set of artificial

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intelligence;
4- Create an artificial intelligence ecosystem by working with business analysts with data scientists to identify problems and goals;
5- The need for the artificial intelligence application developer to publish application models to create data-driven products;

Conclusion with the future suggestion:

Artificial Intelligence technology is an imperative strategic technology that works to obtain greater efficiency and new opportunities to realize advantage the competitiveness of many business organizations and e-government businesses. With artificial intelligence, organizations can get more tasks done in less time while supporting its recent applications (expert systems, artificial neural networks, fuzzy logic systems, systems Genetic algorithms (for decisions, especially administrative ones. But artificial intelligence is still a new and complex technology. To get the most out of it, the organization needs expertise in how to create and manage AI solutions at scale. As such The AI project requires more than just hiring a data scientist. Organizations must implement tools and processes and management strategies to ensure the success of artificial intelligence technology.

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