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Impact of Artificial Intelligence in Marketing Concepts and Applications

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Abstract

The Learning is one of the fundamental building blocks of artificial intelligence (AI). Learning is a process that improves the knowledge of a program by making observations about its environment. It From a mathematical point of view, Al learning processes focus on processing a collection of input-output pairs for a specific function and predict the outputs for new input data.

To understand the different types of AI learning models, we can apply two of the main elements of human learning processes: (1) knowledge-based learning and (2) feedback-based learning. It learning models can be classified based on the representation of input and output data. In terms of learning based on feedback, Al learning models can be classified based on the interactions with the outside environment, users, and other external factors.

Key words: - Artificial Intelligence (AI), Marketing, Observations, Processing, Environment, Different, Elements

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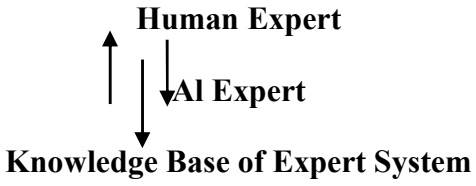
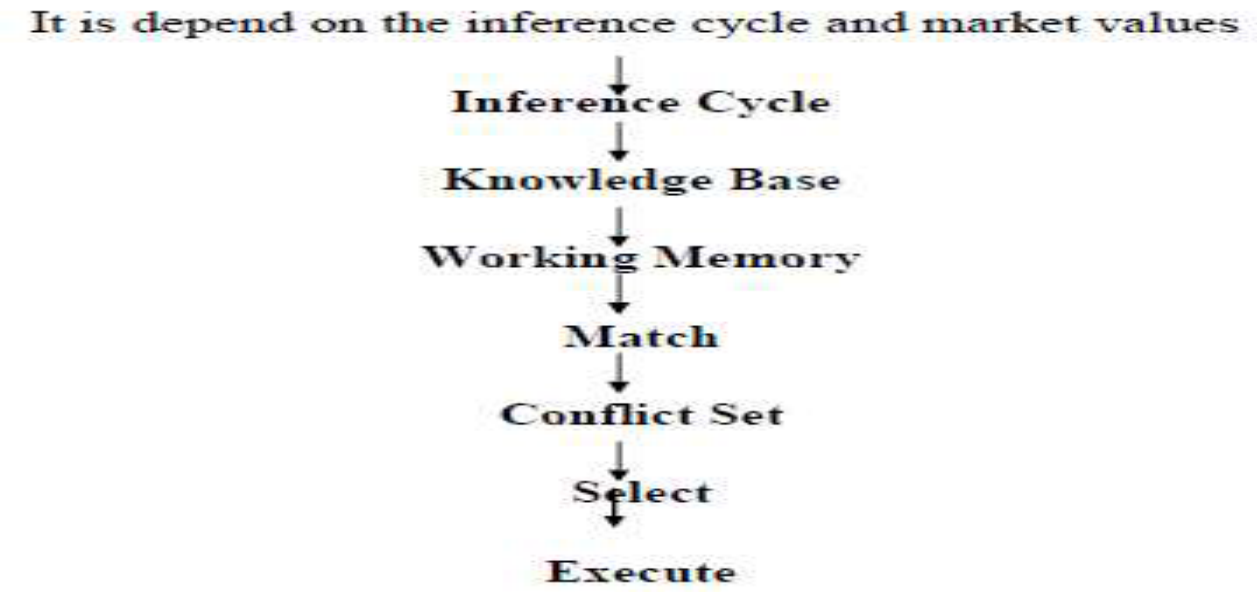
Introduction

Humans have different ways of Marketing which depend on the type of knowledge possessed and platform or society in which Marketing is done.

Similar to humans, there are different Marketing methods of expert systems. The basic classification of Marketing methods, which are popular among machine Marketing researchers, is as follows to represent learning model.



Concept of Marketing and AI



It is a strategy mainly dependent on data. It is like a linear search, where an element is matched against the already present elements of the list. In this case, the element to match are the facts

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present in the active memory.[4] The list is the information data base, and the elements are the rules and facts, The reasoning system compares the If part of each rule of the database with the facts of the active memory.

If several rules match, the concept of conflict set dives in. Each matched mile is placed on the conflict set. A conflict resolution procedure is invoked after the completion of matching procedure. This procedure fires the lowest-numbered rule which adds new knowledge to the active memory. The conclusion obtained from this rule is then added to the working space.

Backward chaining: Here, the assumed conclusion (ie, the result or goal) is matched with the Then part of the rule. If such an axiom is obtained, then its premise becomes the new subgoal. If the assumed goal cannot be supported by the premises or if there is no matching. then the system will try to prove another goal. Thus, multiple inferences are checked until the state of goal is reached. Classification systems, where all the possible inferences can be cross-checked so as to make sure whether they are supported by the data are an example of expert systems application.

The expert system considers all the facts and rules, and tests them accordingly to arrive at a solution. In backward chaining, the reasoning subsystem tries to figure out the reason for the obtained result, as to how that particular result is obtained.[5] That is, given a result, it moves back using the same set of rules and facts, to find out the conditions that has caused the result. It is basically part of the explanation module of an expert system. This reasoning module gives an explanation to the user about how the reasoning process works. This general inferencing process is with respect to the rule-based architecture, which is one of the most common expert system architectures. In other less common architectures (non-production system architectures), semantic networks, decision trees, and frame structures are employed instead of rules.

Analysis of Marketing

It is process control and monitoring: In this, the analysis of data is obtained in real-time. The data is obtained from external devices, with a goal to remove all erroneous data to make a competitive prediction regarding patterns.

Decision management: Expert systems provide support in the decision-making process and help in the design of various external devices. The concepts used may vary a lot. Expert systems provide a way for configuration of the objects using better decision management techniques.

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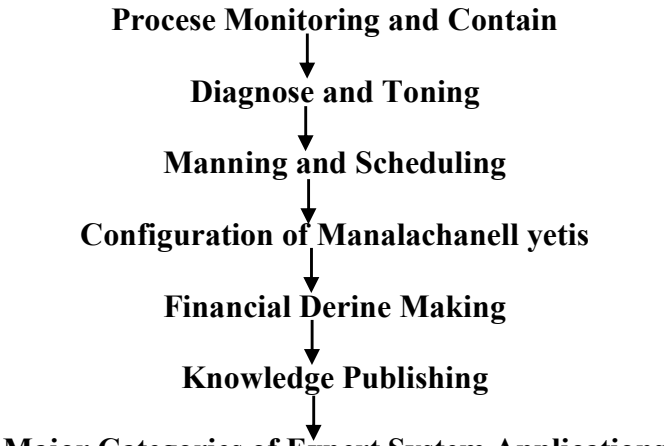
Diagnosis and troubleshooting: The expert systems act as debuggers by finding faults and suggesting corrective actions for the malfunctioning of the device or process by using avail-able domain knowledge.

Planning: The working of the expert systems which focus on planning is mainly based on analysis. Analysis is done on a set of multiple goals which are complex and interactive in nature. This is done so as to conclude a series of functions which can obtain goal efficiently thus leading to better planning.

Configuration of objects: Configuration is the manner by which an answer to a question is decided from a specified list of objects with some constraints. It is considered as one of the most crucial functions of expert systems. Complicated engineering designs and building homes are a few examples of this type of application of expert systems.



Importance of AI

- **Marketing by memorizing:** The Rate Marketing is the simplest form of Marketing. It hardly requires any inferencing and is done by duplicating the information in the form in which it can be directly used in the information database.
- **Marketing through direct instruction:** Direct instruction requires more inferencing. where knowledge is converted into a form which is operational in nature. It is done before storing the knowledge base. It is used when facts are presented in an organized manner.

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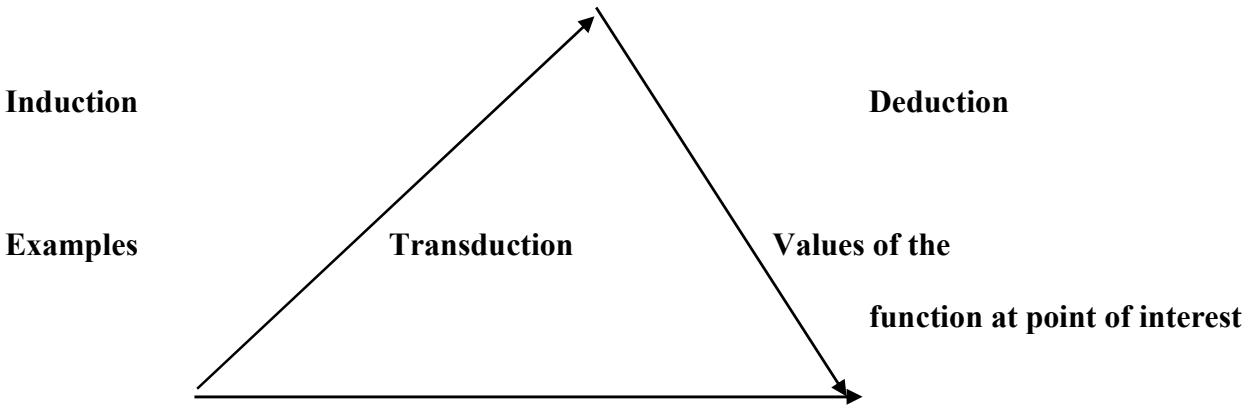
- **Bringing in analogy:** Analogical Marketing is Marketing or inferring new concepts from a given set of knowledge. The previously stored knowledge to relate AI acts as guide in solving the problem of a new concept.
- **Marketing through induction:** Inductive Marketing refers to generalizing a concept after Marketing from a number of examples of that concept.
- **Marketing through deduction:** Deductive Marketing, or deducing, is done through a series of deductive steps using clues that are present in a knowledge base.

  Parent Of (X, Y), Fatherof (X, Y) V, Motherof (X, Y) Sibling of (M, N): MotherOf (Y, N)) (Fatherof (X, M) ^ ^ Fatherof (X, N)) V (Mother of (Y, M) ^ sim

M can be deduced to be N's sibling through the given set of facts. The above classification is based on the type of inference strategy employed and is not dependent on information field and type of structures used for representation.[1]

How reliable are the inferences and evaluations made by the expert system based on a knowledge base. The answers to both these questions lie in the fact that expert systems have the ability to provide reasons as to how certain conclusions are reached, why the given knowledge base was required, and how it was inferred. This reasoning ability of the system makes it an expert system. Expert systems generally reason with meta-knowledge and this explanation is done by the explanation subsystem of the expert system shell.

Approximating function



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The inference engine of these expert systems which gives them this reasoning capability, work. We address this point in the subsequent section where we explain the inference process of an expert system. It is related Marketing and AI.[2]

Review of literature

- **According to R.K. Singh 2022-** The Each matched rule is placed on a set called conflict set. After all the matching rules are found, a particular rule is selected from the conflict set. The selection can be based on the most recent use or some specific condition that matches with that rule. After selection, that particular rule is executed.
- **According to Sunita Goyal 2019-** The inference process is made up of three recursive stages: test, choose, and function: Test stage:

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The contents of the active workspace are tested with the information contained in the information base.[3]

- **According to Sinha R.K. 2018-** The reasoning engine takes in queries from the user as input and responds to the tasks through it I/O or user interfacing unit. It applies this knowledge along with the information already present in the database to arrive at an answer or conclusion. It is depended of the marketing and AI factors.

Objectives of the Study

- Learning is the ability to gather skills or knowledge.
- The general aim of learning is to develop system that are known as agents.
- Learning is important for agents to deal with unidentified environments and changes.

Research Methodology

The term pre-experiments apply to experimental designs with the least internal validity. Although crude and largely avoided (Campbell & Stanley, 1963). These designs illustrate the kinds of rival explanations that threaten experiments generally. Like stronger experimental de-signs, pre-experiments fall into two different types: within-subjects and between-subjects. It is used on the learning, marketing for the aspect for AI.

Data Analysis and Interpretation

It is non-sampling or data collection error often exceeds sampling error and should, therefore, receive special attention (Assael & Keon,1982). Bias and random error can occur in each of several parts of the data collection process, and each has a possible remedy. The sections address respondent contact and cooperation, interviewer training and rap-port, and questionnaire construction and processing.

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Do you know impact of AI in marketing learning and application.

Table-1.1

Respondents	Artificial Intelligence	Market Learning
Male	60	48
Female	40	52
Total	100	100

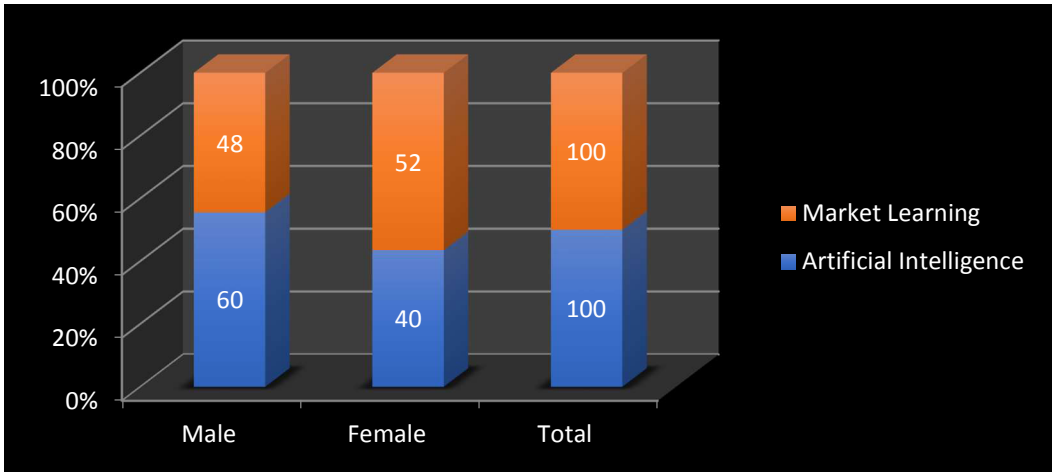

Table 1.1 Has displayed two respondents Male and Female Male has replied Artificial Intelligence 60 and Market Learning 48, Female respondents Artificial Intelligence 40 and Market Leaning 52 show it applied percentage method.

Findings of the Research

- It is related Artificial Intelligence and Market learning for industrial application.
- It is used to develop for marketing purpose to activate function.

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Conclusion

The Expert systems are extensively used in the finance Advisory programs assist bankers in making decisions about investments. The Foreign exchange is where expert systems are quite often used. This is a relatively new field in the application of expert system but it is a potentially significant area. The main function of expert system in this field is make accessible knowledge.

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