Designing and Knowledge Based Expert System for Handling Business Dynamics

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Abstract— This paper focuses on creation of Knowledge base for handling business dynamics using domain transformation by applying back propagation network.

Index Terms— Knowledge base, Domain Transfer Technologies

1 INTRODUCTION

Knowledge based news computing emphasis on the use and representation of knowledge about any application. The powerful capability of Neuro-computing system helps in modeling knowledge using Neuro-Fuzzy approach. This paper deals with theoretical models of computation which has learning capabilities of recurrent network models. It also focuses on various business patterns where we can use knowledge base one of the tool to analyze. There has been number of applications where we can represent Fuzzy finite automata as a tool to solve business decisions. In context of NN learning, prior learning knowledge is designated to any information concerning the task domain or the target function. The knowledge can have different sources: it can be derived from human expert or accumulated by the system from the previous experience.

Prior knowledge can be used in Neuro-Fuzzy Approach as tool for Design and training. The methodologies followed for relating consumer's need with technologies, which are conventionally qualitative, preclude a quantification of these relations, the sole genuine foundation of an economic and financial analysis on which the entrepreneur can fully appreciate the resources that he will have to omit in an environment where the joint marketing and technology aspects absolutely must be clearly grasped.

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The solution to this problem is influenced by four forces.

The model expert system should provide information about how the process of creating and modifying resources influence their value and when the value has been changed.

The model of expert system should provide information about who was responsible for the resources and when.

The expert system should capture the fundamentals of the user's business and filters out those user requirements that are likely to change.

2. PREVIOUS RESEARCHES

The promises of expert system were historically derived from Nevell and Simon's pioneering work on General Problem Solver & GPS.

Newell and Simon's idea of general problem solver was modified by Riesback and Schank in which they highlight the human reasoning power in an expert system. Rao and Luxhoj defined an integrated intelligent manufacturing system which uses several symbolic reasoning system and numerical computation packages. We will be taking the help of these seasoning systems in developing a framework that can provide proper visualization of Business of Dynamics.

2.1 DOMAIN TRANSFORMATION IN EXPERT SYSTEM

The output of the transformation process is an economic resource that was of business application want to monitor and conferred one of the outputs is a product, but many conversion process to produce other resources. In this scenario business application are interested in planning, monitoring and controlling the work in progress and intermediate resources.

The value chain model for creating a simple business process is shown in figure 1.

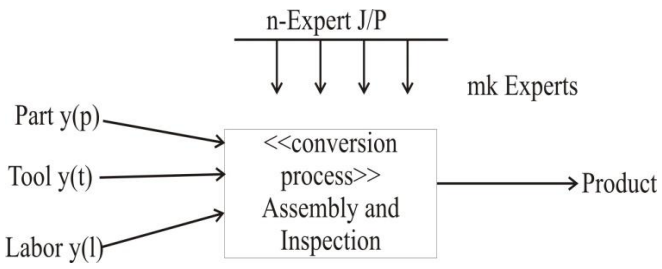

Figure 1 : Expert I/P Business Transformation Model

It is important to observe that information can be lost when transform in the domain resulting in a poor classifier. The order to select the best possible combination of Port, Tool and Labour, Network selection criteria is used. The detail model consists of various Export 1..... ExportRV based on ontology based Pattern matching.

To properly decide on various resource quantities each training pattern consisting of an input vector and a desired output response vector a Tree is generated which finally detects the resource requirement at Assembly and Inspection.

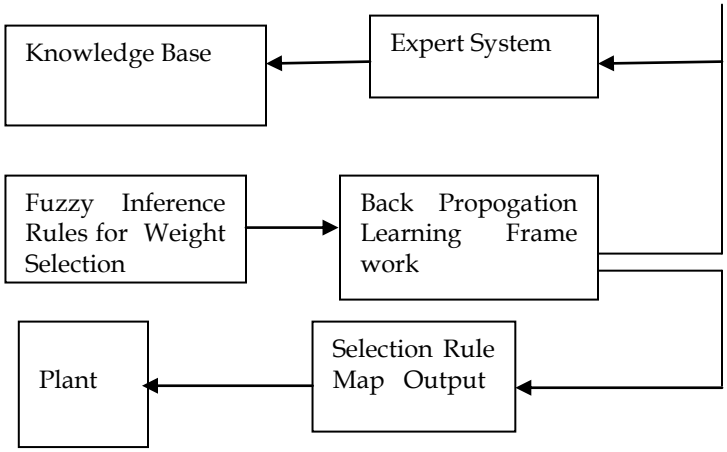

Figure. 2 : Workflow dynamics of Expert system

The algorithm which can describe the fuzzy control relation is given as:

Step : Find the desired transfer function of

$y = \Sigma \Sigma y (p) \mid \Sigma y (t) \mid \Sigma y (l)$

Step 2 : If $\Sigma y (p) >$ Required Level switch to $\Sigma y (t)$

If $\Sigma y (t) >$ Required level switch to $\Sigma y (e)$

Else Return to $\Sigma y (p)$

Step 3 : Train the Network for next Iteration.

Step 4 : Generate a Rule Base and upgrade at each situation.

Step 5 : Assign Judging and end the iteration.

The resources y (p) , y (t) and y(l) are viewed as set of keywords by lemmatizing their significance weight age.

2.2 INDEXING TO CREATE KNOWLEDGEBASE

Keywords correspond to a unique multiple value attribute. Let n total number of technical objects like y (p), y(t) and y(l) for making the product P each elementary technical object being represented in scalar form. We get the equation as:

P = {Σy (p), Σy (t), Σy (t)} Where

[Σy (p1), Σy (p2)... Σy (l)]

1(Σy (t1), Σy (t2), .. Σy (tn)), (Σy (l1), Σy (l2)..... Σy (ln))

In creation of knowledge we will be taking the manufacturing advances at each and every process of plant given as:

PKI ∈ {MA1P, MA2P, MA3P,....., MANP}

where PKI = Knowledge Index Bar

PKI can also defined as Technology Vector : is the product view from resources and technologies.

We can develop a grid which represent as : [PKI= ΣR0 ΣMA] where PKI is the Cartesian product function.

MA R	Process P1	Process P2	Process P3	Process P4

y(p)Σ	0.9	0.6	0.3	0.6
y(t)Σ	0.6	0.4	0.3	0.9
y(l)Σ	0.6	0.8	0.9	0.4

Figure 3 : Matrix showing the Cartesian product of Resources and Manufacturing advances to create product during one single iteration.

3. CONCLUSION

The strategy used in development of expert system contains the expertise required to solve specific domain related problems. The major strength lies in the fact that the presence of expert is not needed. The creation of knowledge base is the care of the system. The knowledge - base is not to be confused with database. As the knowledge base is represented through problem solving rules fact, predicate calculus etc. These is extensive use of IF - THEN rule.

Each time new rule is examined, it is checked against the current status of the problem solution stored in database . Two methods are generally used by rule interpreter to search for answers are forward chaining and backward chaining. The final element that we have used in generating a product is the user interface. It is an interface through which user can enter the initial information in the database.

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