Knowledge Management Process Model using IHS based on Detecting Process with Less Energy Consumption

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Abstract *– In this work, the major focus is on the improvement of management process, which is to reliably form asolution process of optimal. The imbalanced data managing process is maintained with efficient process of proposed system (IHS – Improved Hybrid Sampling) with less energy consumption. In this study, we present and suggest a comprehensive and phased knowledge management process framework that integrates and streamlines varied and multiple processes in a phased manner to collect analyze and manage knowledge. This KM process framework will help to identify the information needs and provide decision makers with useful step-by-step recommendations and guidelines based upon the integrated knowledge and past experience. The performance shows the improvement of the balancing the data and energy consumption for process in an efficient manner.*

Keywords *– Sampling; Process Model; Imbalanced Data; Pattern Mining; Class Detector; energy;*

1. Introduction

A well-defined software process model (SPM) is a determinant process factor for achieving quality products and productive projects. Accessing a process, quality is a relevant concern to improve several aspects such as conceptual integrity, usability, maintainability and performance. Software process modeling describes the creation of software development process models. A software process model is an abstract representation of the architecture, design or definition of the software process to manage and deliver quality software systems.

As Knowledge Management (KM) has evolved over the past couple of decades, the need for an integrated and cohesive Knowledge Management process framework in healthcare industry and healthcare information systems in Pakistan has become evident. With a Management Process Framework, KM can take on the aspects of other management systems, and be made part of normal business, rather than relying on an incongruent set of tools.

A Knowledge Management Process Framework ensures that all necessary KM elements (Accountabilities, Processes, Technologies and Governance) are in place, and interconnected. This ensures that there are no gaps in the system, and that knowledge flows freely through the organization. This research paper outlines the stages of KM strategy implementation along with the actions necessary at each stage to move you to the next level. The life cycle process of Knowledge Management is shown in Figure 1.

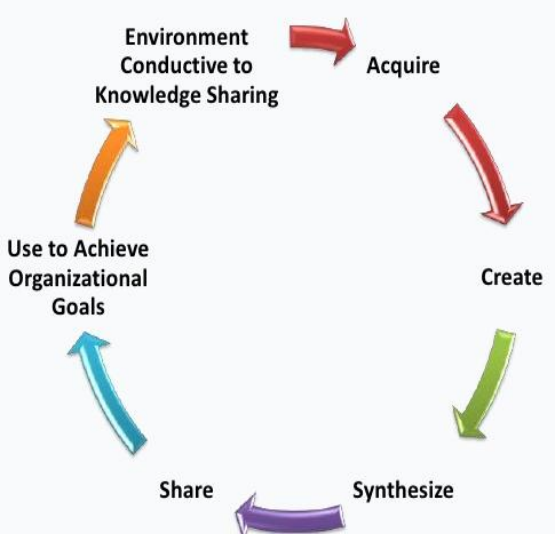

Fig. 1: Process Life Cycle

As software processes are mind boggling, receiving a KM structure into programming improvement will help in accomplishing quality item. The KM is turning out to be more apparent in the product building writing, as the product improvement action is basically a human knowledge intensive movement.

Knowledge Management (KM) is a term difficult to understand without knowing and understanding the meaning of the word "knowledge". Further, it is also important to clearly differentiate between knowledge, information or data.

Obviously it seems a bit difficult task to differentiate them from each other as being apparent firstly. The term and expression seemingly used as "Knowledge" does have multiple meanings according to its everyday use within a language, specific field or even similar disciplines.

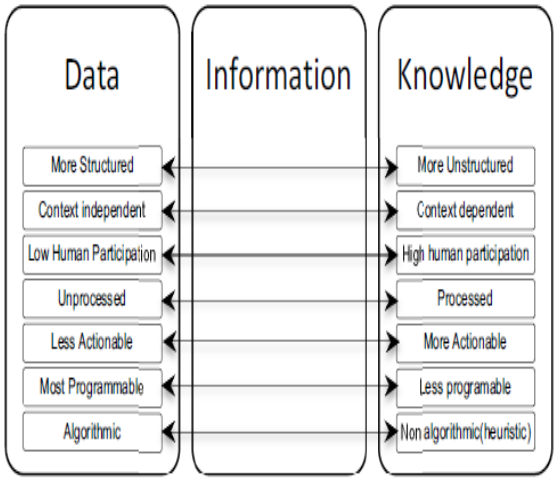

Fig. 2: Adapted from Data, Information and Knowledge Attributes

During the 90s, the usage and application of information technology became increasingly common and the basic simple-minded view of the term "knowledge" was widely spread among the masses.

However, there is a considerable number of knowledge management systems used even today as virtual substitute of information placing them little ahead of information management systems. The perspective on data, information and knowledge is elaborated in Figure 2.

2 Literature Survey

In [1], the worst case some frameworks do not even allow to define a domain-range, rather they just gather the knowledge entries. One reason of not defining the domain-range information is that it is costly.

On the other hand, the reason for not following the domain-range constraint is that the most of them are either manual or semi-automatic, therefore they face adaptation difficulty. In this research, we propose a relation-wise machine learning model that can define and validate domain-range information automatically.

The article [3] realizes the needs for organizations to increase its readiness towards the implementation of knowledge management. This study specifically analyzes factors related to knowledge management tools utilization within the organization as antecedents towards knowledge management implementation readiness. Data were gathered from 57 respondents whom were employees of a leading software development organization in Indonesia.

The analysis was conducted by using Partial Least Square Structural Equation Modelling (PLS-SEM) technique. This study concludes that incident management tools positively influences the use of portals, as well as internal KM repository tools.

In [2], authors intend to develop a framework that can be used to measure KM readiness of an organization using AHP method. The data collection for the development of the framework is done through literature studies, mapping the knowledge management critical success factors (KMCSF) (Figure 3), and focus group discussion among the experts.

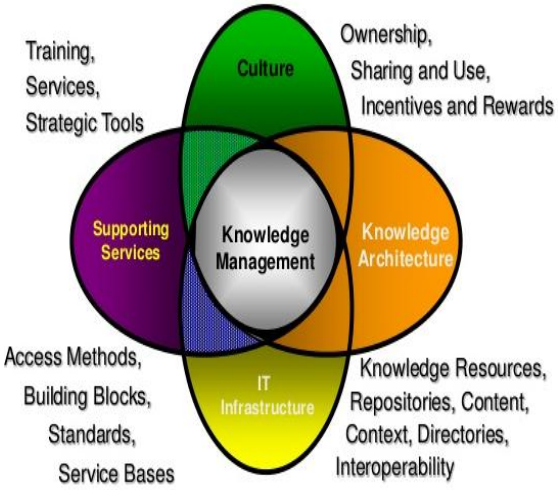

Fig. 3: KMCFS

Basically, every part of the computer forensic tool is linked to a discrete time Markov chain as described in [5]. If this can be done, then a probabilistic analysis by Markov chains can be performed to analyze the reliability of the components and of the whole tool.

The purposes of the proposed reliability assessment method are to evaluate the tool's reliability in the early phases of its development, to improve the reliability assessment process for large computer forensic tools over time, and to compare alternative tool designs.

The reliability analysis can assist designers in choosing the most reliable topology for the components, which can maximize the reliability of the tool and meet the expected reliability level specified by the end-user.

A new applicable knowledge management model is introduced in [6]. The intended model is obtained through analyzing the achieved results in a research developing center to expand the innovativeness and knowledge creation, sharing and distributing process among the employees from a small and medium-sized enterprise research and development center (SME R&D center) as a case study.

There are three main themes to be identified based on the analyzed and achieved results. These themes are classified based on the gathered information. In fact, these themes are the Nodes, based on which achieved codes are categorized and organized.

In [8], starting with improving management execution, this article focuses on ideas and methods on the construction of teaching management system basing on knowledge management. From the meaning of knowledge management, this article builds a framework model of teaching management system and designs the five functions of teaching management system platform, introduces the implementation of teaching management system at Beijing Jiaotong University.

In [7], author attempts to analyze the readiness of knowledge management (KM) (Figure 4) in Faculty of Computer Science, Universitas Indonesia. 45 staff of faculty was selected by stratified random sampling for data gathering by questionnaire. Then, one way ANOVA was used to analyze the data.

Fig. 4: KM Process

The findings of this study indicates that in organizational culture, IT infrastructure and

individual acceptance factors, organization is ready, but need a few improvement to implement KM. The organizational structure factor is not ready, hence it still needs some work to intention to be involved in KM, this study showed that organization is ready, but need a few improvements to implement KM.

In [4], presented and suggested a comprehensive and phased knowledge management process framework that integrates and streamlines varied and multiple processes in a phased manner to collect, analyze and manage knowledge and the knowledge creation process for supporting the effective decision making in healthcare information systems related to healthcare industry of Pakistan.

In [9], examined the accuracy and reliability of the memory and encoding related graphic response (MERMER) technique for detecting information related to events subjects have experienced, despite subjects' efforts to conceal that knowledge. Information obtained through interviews was used to develop stimulus sets consisting of words and phrases presented to subjects visually by computer.

3 Proposed Work

The aim of this work is to consistently form an optimal number of process with the improve design. The major challenge in the existing is that despite the presence of extensive data and related information.

Therefore, there is no solid Knowledge Management (KM) process or framework for controlling. It is providing the diversified nature of knowledge creation for effective decision making resulting in ineffective and inefficient organization.

Here, utilization of various important resources being used during the decision making operations. The imbalanced data managing process is maintained with efficient process of proposed system (IHS).

Boosting is an ensemble technique to combine weak learners to create a strong learner that can make accurate predictions. Boosting starts out with a base classifier / weak classifier that are prepared on the training data.The base learners / Classifiers are weak learners i.e. the prediction accuracy is only slightly better than average.

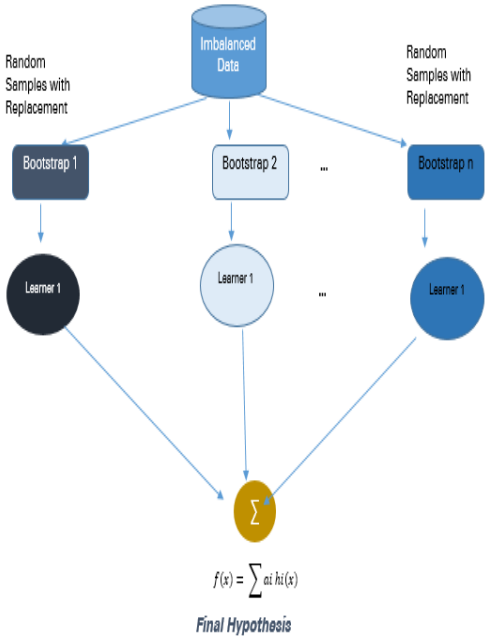

Fig. 5: Boosting Methodologies Based Classifier

A classifier learning algorithm is said to be weak when small changes in data induce big changes in the classification model (Figure 5). In the next iteration, the new classifier focuses on or places more weight to those cases which were incorrectly classified in the last round.

In this study, we present and suggest a comprehensive and phased knowledge management process framework that integrates and streamlines varied and multiple processes in a phased manner to collect analyze and manage knowledge. The knowledge creation process for supporting the effective decision making is considered in information systems.

This KM process framework will help to identify the information needs and provide decision makers with useful step-by-step

recommendations and guidelines based upon the integrated knowledge and past experience.

3.1 IHAS

Input: Imbalanced training data set

Output: A classifier

Procedure

Step 1: Train and classifier for training dataset and

Delete some negative samples.

Step 2: Divide randomly T into k disjoint equivalent subsets.

Step 3: Select subset and over-sample the positive samples

And generate a new training data set by merging the new synthetic samples into;

Train an initial classifier for data set.

Step 4: For each subset in the rest subsets do

Step 4.1 Compute the distances between negative samples and the hyper plane of classifier.

Step 4.2 Select negative samples with the smallest distances;

Generate synthetic instances.

Step 4.3 Merge all positive samples

And the new synthetic samples into, and obtain data set.

Step 4.4 Train and classifier for dataset.

Step 5: Classify data set and obtain a classifier.

3.2 Detector Technique

For each In in Nmin

{

Calculate (Km(Nma));

Calculate list(Nbmin);

Map Nmin to Nma;

Create bound();

}

End For

4 Simulation Results

The simulation result is carried out by implementing using MATLAB tool and consists with the analysis of performance and comparison between various existing approaches and the proposed approach.

Table 1 shows the Analysis of Imbalanced Ration for various Data sets. The time analysis and the ratio of imbalanced process are presented in Figure 6 and Figure 7, respectively.

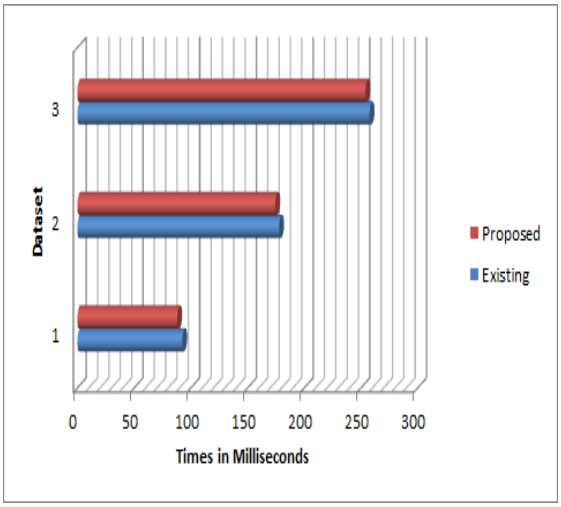

Fig. 6: Time analysis of Sampling Process

Table 1: Analysis of Imbalanced Ratio

Datasets	Existing	Proposed
Datasets 1	52.6%	50.8%
Datasets 2	53.6%	51.7%
Datasets 3	48.23%	45.9%

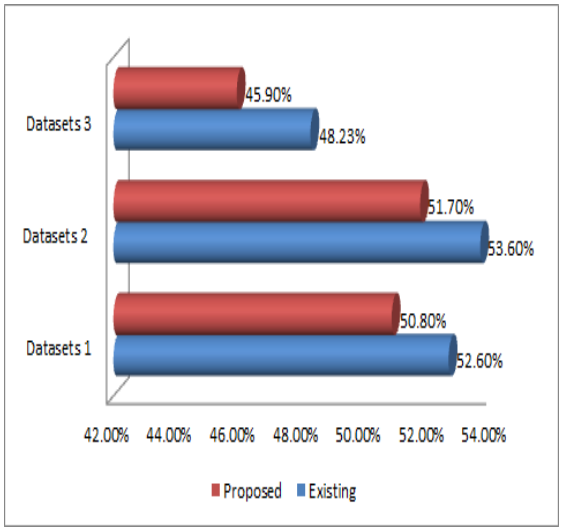

Fig. 7: Comparison between proposed and existing

5 Conclusion

In this work, we suggested a hybrid approach of sampling based on Knowledge Management Process Framework which helps and guides to have most beneficial way of increasing competitive advantage and saving valuable energy resources. The Knowledge framework is an asset which must not be compromised upon, so must be managed carefully.

In future this work will be utilized to develop for the entire software life cycle model for the development of social networks effectively using intelligent techniques. More advanced analysis could be conducted which include specific attributes.

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