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## Editorial

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**Biographical notes:** Rabindra Ku Jena is currently working as an Assistant Professor of Information Technology at Institute of Management Technology, Nagpur, India. He obtained his in MSc, MTech in Computer Science and Engineering, and PhD from Indian Institute of Information Technology and Management, Gwalior, India. He has more than 13 years of experience in teaching and research. He has more than 40 research publications in various refereed international journals/conferences in his credit. He is the Editor of *International Journal of Innovative Research in Science and Technology (IJIRST)* and *IMT Case Journal (IMTCJ)*. He has edited three books in IT and business intelligence. His area of interest includes data mining, soft computing techniques, business intelligence and CAD for VLSI.

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## 1 Introduction

*International Journal of Business and System Research (IJBSR)* is a refereed multi-disciplinary journal covering different aspect of business and system research. Data mining is being one of the hot topics in the area of business management for decades. So, I took the opportunity of editing a special issue on 'Data mining concept and applications in business intelligence' for *IJBSR*. Data mining is the process of analysing data from different perspectives and summarising it into useful information (i.e., the information that can be used to increase revenue, cut costs, or both). It allows users to analyse data from many different dimensions or angles, categorise it and summarise the relationships identified. It is also the process of finding correlations or patterns among dozens of fields in large relational databases. In other hand, business intelligence (BI) describes a set of concepts and methods to improve business decision making by using fact-based support systems. So, one could say that data mining is the set of tools that make the BI process more efficient. In a world where valuable information is the new gold, BI can be considered the new Gold Rush.

Companies with a strong consumer focus – retail, financial, communication and marketing organisations, primarily use data mining today. It enables these companies to analyse the relationships among 'internal' factors such as price, product positioning, staff skills, etc., and 'external' factors such as economic indicators, technology, competition, and customer demographics in order to determine the impact on sales, customer satisfaction, and corporate profits. Particularly, in a process driven organisation measurement of performance is a key success factor, where the organisations need to extract useful information from internal/external systems to support the evaluation of the situation and choose the best quick win initiative.

In this special issue, a sincere effort has been made to capture the current state of Data mining methodologies and strategies for achieving a sustainable business growth. Both theoretical and empirical research papers have shows the evidence on how data mining techniques are useful for BI process.

## **2 Inside this issue**

This special issue contains seven papers related to data mining application in BI. The first paper, 'An enhanced pre-FUFP algorithm for incremental mining of association rules' by V. Umarani and M. Punithavalli, proposes an efficient incremental mining algorithm, called enhanced pre-FUFP algorithm, which extends the pre-large item set algorithm further by including the recency concept. The second paper, 'Predicting quality of data warehouse using fuzzy logic' by Anjana Gosain, Sangeeta Sabharwal and Sushama Nagpal, proposes a model based on fuzzy logic approach to approximate non-linear relationship between the metrics and the quality of multi-dimensional models.

The third paper, 'A novel algorithm for extracting knowledge based on mining multi-level sequential patterns' by Negar Gh Ghanbari and Mohammad Reza Gholamian, proposes a new efficient algorithm called dynamic vertices levelwise (DVLw) for mining multi-level sequence patterns. It uses the same principals as other candidate generation and test algorithms but handles multi-levelled property for sequences prior to and separately from the testing and counting steps of candidate sequences. Empirical evaluation using synthetic data indicates that the proposed algorithm performs significantly faster than a state-of-the-art algorithm with this approach.

In the fourth paper, 'HUPT-mine: an efficient algorithm for high utility pattern mining', Ramaraju Chithra and Savarimuthu Nickolas designed a novel high utility pattern tree (HUPT) structure is proposed by applying two strategies for pruning candidate itemsets by scanning the database twice only. For each conditional pattern base, a local tree is constructed with required information to generate candidate item sets, by employing pattern growth approach. The experimental results on different datasets show that it reduces the number of candidate itemsets and also outperforms two phase algorithm for dense datasets with long transactions.

In the fifth paper, 'Detecting data inconsistencies by multiple target rules', Kalaivany Natarajan, Jiuyong Li and Andy Koronios extend RHS to multiple disjunctive rules. The coverage of multiple disjunctive rules has also been extended and prediction power of multiple disjunctive rules is higher than the traditional association rules. The sixth paper is 'Examining cultural effects on distributed decision-making processes using keyword analysis and data mining techniques' by Norhayati Zakaria, Derrick L. Cogburn, Pradnya Satish Khadapkar and Claudia Louis. This is empirical study employs a keyword analysis and text mining technique using the Provalis mixed methods research.

In the final paper, 'Social media framework for business blog mining', Flora S. Tsai describes a social media data mining framework for business blog mining which evaluates the ability of blog-specific properties to improve classification results in our dataset of business blogs.

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