



ISSN: 0975-766X  
CODEN: IJPTFI  
Research Article

Available Online through  
[www.ijptonline.com](http://www.ijptonline.com)

## MIS BASED DISTRIBUTOR MANAGEMENT SYSTEM (DMS) USING DISTRIBUTED DATABASES

R. Senthil Kumar<sup>1</sup>, and P. Sivaram<sup>2</sup>

<sup>1,2</sup>Assistant Professor, Department of Computer Science & Engineering,  
Srinivasa Ramanujan Centre, SASTRA University, Kumbakonam, Tamilnadu, India 612001.

*Email: [logicisgreat@gmail.com](mailto:logicisgreat@gmail.com)*

Received on: 18-02-2017

Accepted on: 29-03-2017

### Abstract

The most important function of the Management Information System (MIS) in global business environment is characterized and analyzed in shine of its capability for decision making system and it enhances over time to become a serious part of its business functions. The main use of Information Processing Systems (IPS) has raised in the previous twenty-five years not only in firms, but also by individuals, organization, private sector and also government.

The proposed system explores business management should reflects the convenience in the pattern and architecture of MIS, as a way of further company's control of the market as well collect appropriate and suitable system software and program to meet MIS's growth and extension in the overall business environment. The proposed Distributor Management System (DMS) is a major function which helps small and medium level enterprises in monitoring and tracking stock and coordinating transaction processing. The efficiency of distributor management dependents on useful tools and facilities in particular modern information and communication technologies. This system helps to improve purchase, sales and inventory, billing, ledger and account masters for distributors with the help of MIS functions. The system which we developed has realized the broadcast and control of large goods, so as to smooth the progress of the management and increase the sales figure and reduce a big burden of the distributors. The main objective of the proposed system is developed for small and medium level distributors and to provide a good information system, decision-oriented, low-cost, powerful report generation, easy scalable and strong system to the assisting, and also the various configurations of computer in distributed database environment can meet the requirements of the distributors.

**Keywords:** MIS, DMS, Distributor, Reports, Distributed Databases.

## **1. Introduction**

Logically, a good quality MIS concept intends to right decision making in retailing and wholesaling and it is based on this direct concept that this system is going to carefully analyze the roles of management systems in decision making. As a management consideration, MIS functions are extremely complex and delicate field that calls for a lot of care to be taken by its distributors. It is for this reason that it is recommendable for organizations to ensure that they carefully choose the computerized system to resources to ensure the proper functioning of a company and it has changed the substantial layout of offices to contain local networks and integrated systems. As the scope of business vision gradually increases towards decision management and distributor management.

Most of the ongoing research explains the parts of the business management to ensure the proper functioning of an organization and it has changed the frequently with local networks and distributed integrated systems. It is also a formalized protocol to given management at all levels and in all functions with appropriate data from all relevant sources to enable them make timely and effective decisions for institutionalization, programming, monitoring, evaluating planning, executing, decision-making and authoring the activities for which they are responsible. Despite this, majority of businesses in developing countries, especially those in remote areas do not take full features of the technologies due to challenges related to the design of the technologies. MIS provides the advanced role of global marketing and distributing with its knowledgeable from which decision-makers are able to make good business environment. Distributor Management System is a major role in wide range of business circles, every organization puts limits to what size and scope of business can be described as a small and medium level enterprise. In this paper, the consideration of DMS as a business entity having employee's not more than ten persons, whose scope does not go beyond the given region and its data entry processing required only around five systems with distributed database environment.

It is observed that, the challenges with the various existing systems include high budget of purchasing full software packages, special hardware requirements of some functions, systems not satisfying, exclusive features of DMS, the payment for extra function or reports that are not needed. In the market the all distributors on the work sheet which is very boring and time consuming to give the output. Establishing a set of operations, reliable and perfect distributor management system, reasonably adjusting the functional activities between business and operation, realizing distributed environment, network and authenticate report generation management works, combining with plant information system and enhancing the transformation level of distribution management. Additionally, this system

based on distributed database system with the help of SQL. Day-to-Day, monthly, yearly calculations and producing the high demand reports. The usual problems faced in distributor centers include loss of goods, high cost of sales, customer problems, stock maintaining, loss of man power, unwanted report generation, product tracking, and improper deliver etc.

In order to solve the problems in the business environment, the proposed work is that the purchase, sales and inventory and reporting modules can be enhanced with the help of computer software packages with MIS intelligence. The top objectives of the system are to design an easy to learn, best model for distributors and also for future developments, reduce cost of man power, low purchasing cost, managing business goals and demands with the help of MIS reports, easy transaction processing cycles and increasing profits through a more effective distributor management and tracking system.

## **2. Related Work**

Distributors today, are much more troubled about the effect of competition than they were even a few years ago, and they must act in response to the practical pressure not only from restricted source but also from local, national and international resource; likewise, they must seek to travel around all functions provides that are available in the immediate, national and business environment. Management Information System explores information in form of reports and displays to top level managers and many business people. The distributors of magnificence and personal care products are the supply side actors of the market. There are different types of distributors, differing in the size of business and mode of selling. They include producer's retail outlets, top-level marketing's, low-level marketing's, super markets, departmental stores and traditional and private multiproduct distributors shops – all selling personal products directly to the consumers through marketing channels. MIS promotion strategies are powerful system to give marketing campaigns an extra frame in attracting new customers [1].

Management Information System is practical for every community of the organization whether it is purchase section, sales section, promotion section, funding section, manufacture section or HR section. The scope of MIS also concerns supply chain management, project management, customer relationship management. These all are included under organization information system which increase business and management complexity and redundant difficulty [2]. In addition to that management difficulty refers to technological revolution, research and development, sudden increase of information whereas management complication refers to decision making, artificial intelligence, cloud storage

management, commerce enhancement with help of science technologies, to provide the usage clearly with the help of advanced computer technology [3].

The advanced concept of CRM (Customer Relationship Management) systems provides data that relates directly to the distributors and customer experience. The technology of ERP (Enterprise Resource Systems) secures the data used in the entire distributing process. Decision Support Systems or Decision Making Sense System and Data warehouse management often serves summary data from several systems in order to show executives a snapshot view of the entire organization [4]. According to management rule, the objective of management decision is to develop and upgrading of decision makings management, communication management, wire-less and network technology, as well as large-scale database technology, the commercial large agencies competition has become the information technology, the chain of medium level of cost competition. The focus of the enterprise information architecture has become a main node of the industries acceptable enlargement. Most of the domestic marketing agency management focuses on the theoretical study of database process and distributed network management [5]. This study explores based on common marketing distributors management system, analyzing the inadequacies of purchase and sales refinement and processes functioning such as, adding improvements to the distributed database [7], with the condition that not sacrifice efficiency, achieving the goal of sales reports management designed. Computer controls all aspects of the execution covering purchase and sales orders, receiving, inventory, sales to the back, thinking system generated automatically takes decision and managing the required powerful reports.

The configuration independent benchmark addressing methodology in distributed databases with deployment environment details are provided by Ardagna et. al., 2016 and their work focuses on the significance on the part of end user's effort on such system operations are very low [8]. They presented with the extensible mode and provided the proof for applications on SQL and NoSQL databases and evaluated with different properties such as performance and consistency. The Zhou et. al., 2016, and their representation on distributed skyline queries over uncertain data, provides efficiency on handling them on real applications, and in their proposed algorithm, redefined with the approximate global skyline probability and to choose local representative tuples due to minimum probabilistic bounding rectangle adaptively [9]. The Turcu et. al., 2016, presented a concept on highly scalable and strongly consistent transactions using automated data partitioning. Their work focuses on automation on partitioning the data using the correct transactional primitive and routing transactions appropriately [10]. The Miyazaki et. al., 2016, presented a demand-addressable sensor network with handling of a large volume of data, which finds the desired

information in a short duration of time from a large amount of sensed data generated by a large-scale sensor network [11]. The Wanis et. al., 2016, represented their work on distributed cloud clients, and they developed, a differentiated VNaaS pricing and service monitoring mechanisms for the cloud service provider (CSP) to regulate the offerings and demands of the distributed cloud services [12]. The El Rouayheb et. al., 2016, demonstrated about the problem of synchronizing coded data in distributed storage networks and provided with novel protocols for synchronizing frequently updated and semi-static data based on functional intermediary coding involving permutation and Vander monde matrices [13]. The Zhang et. al., 2016, presented the data placement for data-intensive applications with an efficient location-awareness and addressed with a model called “an integer-programming-based data placement model” to overcome the challenges as a a Non-deterministic Polynomial-time (NP)-hard problem [14]. They further presented a Lagrangian relaxation based heuristics algorithm, to obtain ideal data placement solutions with simulation results [14].

### **3. Methodology**

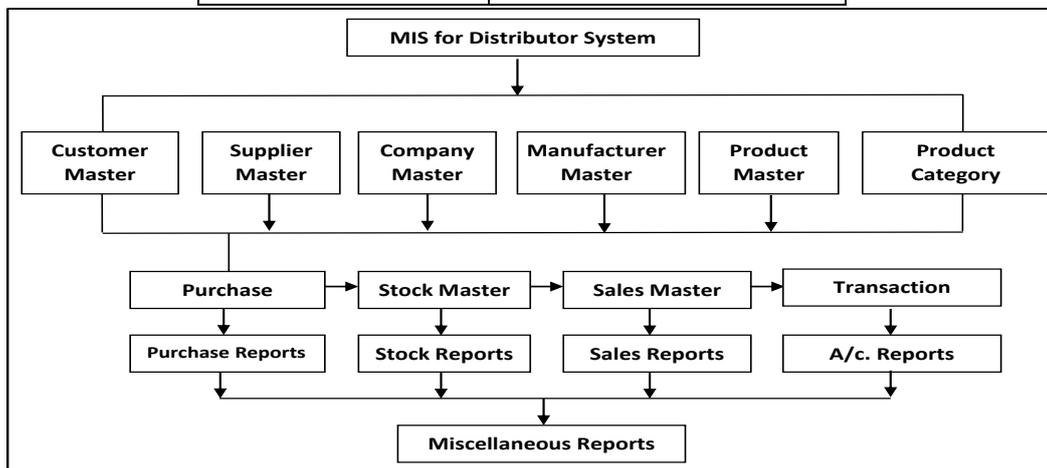
The study of this paper is to make use of simplest decision and distributed technology and implement them into more useful fields. Our research deals with the completion of Distributor Management system with the help of MIS functions. In business world, all the industries follow hierarchy such as retailer manager, area manager and distributors to sell their products, mainly they are not selling product straightly without following hierarchy. This system is developed for the solution of distributors to monitoring and managing the details of every stock delivered by industry and implementing and altering the stock level according to the movement of sales and its working experience in terms of target given by company in respective areas to respective customers. Managing report generation efficiently and gain oriented to reduce time for delivering usual reports in terms of weekly, monthly, and yearly oriented companies. Also, they can easily think over that the market status of their product and to find easily out in which region their product will be sold gradually, sold highly or sold slowly. In addition to that the system is a suitable solution to all type of distributor in-charges who those are selling large products with fast moving for customer's attracting with regards the system of individual companies and managing companies' target with more efficient MIS reports to balancing and managing customers with collecting data of consignment quantities in business network. The proposed DMS is designed and developed using the Management Information System model, this model makes it easy to identify modules like sales, purchase, stock, reports etc., and to locate and fix bugs quickly with very small amount of effect on other components and allows reusability of program developments [15]. This

DMS provides the user convenient interface resulting in extracting each and every usability feature of the system. The programming language for this system is Visual Studio Environment and SQL as backend in distributed database environment along with interacting interfaces. This research helps in finding earlier records can be carefully verified them and one can make the best decision using past records to improve current growing business with efficient and flexible data and reports handling. The addition feature of the study provides the in a very less time consumption, low cost, distributed environment based, secure and high level efficiency. Also, to accommodate the ever-expanding nature of businesses, the system sought to develop a solution which will be easy to improve through advance developments to meet future needs of business. The forces which drove the selection of this topic were the improvements of application features in leading distributed database management systems in recent years, as well as the potential of distributors to provide competitive advantages for companies for proper implementation of infrastructure to obtain the meaningful information. This system is not predictable to be a final release. It serves as a general MIS model and basis for future improvements as the data needs of DMS increase. This system spotlight looks at the role of distribution management systems (DMS) in the small and medium scale distributor centers and can benefit from implementing DMS to help them provide faultlessly to end users for demand visibility. This system enables goods movements to be planned, monitored and tracked throughout the whole distribution process. Key modules implemented include master data, purchase management, sales and distribution, ledger and accounts, monitoring business intelligence (BI) reports. Specifically, the system serves closely the implementation of a DMS solution to improve its business in the emerging markets with the help of MIS technology. This system mainly focused the following main modules to carry out entire front-end operations and are given in Table 1.

**Table 1. Main modules of DMS.**

Module Number	Module Name
Module 1	User Creation/ Rights
Module 2	Sign In
Module 3	Go-down Master
Module 4	Supplier Master
Module 5	Customer Master
Module 6	Product Type Master
Module 7	Product Master
Module 8	Purchase Master

Module 9	Sales Mater
Module 10	Stock Master
Module 11	Transaction Master
Module 12	Miscellaneous Search
Module 13	Miscellaneous Reports
Module 14	Auto Backup
Module 15	Sign out



**Fig. 1. Architectural diagram of DMS.**

The Fig. 1., represents the architectural details, in which the role of MIS plays a vital role. With DMS support, the distributors can generate intelligence reports and are listed in Table 2. The operations and functionalities of DMS are listed below:

- ❖ The System the distributor managers are easily maintains their purchase and stock entries properly and which provides to distributor to maintaining the product quantity in each with easily calculated their profit.
- ❖ Useful for finding and maintaining the summary of their product which will be clearly sold in market or not.
- ❖ Distributors have consolidated modules which combine all information about the purchase, sales, stocks and products masters to provide the cumulative reports for each.
- ❖ It helps the distributors to maintain the all customer details properly.
- ❖ For distributor awareness, if any one of the business customer are buying the company product repeatedly or highly profit, then the next situation the distributor manager gives the much quantity of that product to that customer.
- ❖ Frequent monitoring report available to check how many products have been returned per day/week.
- ❖ Generate sales-analysis graphs for each of the item (like how is product selling in the last one month/year)

- ❖ Check the stock items that are not available, so that they can be stocked.
- ❖ Maintaining of stock with strong module distributed towards all suppliers, customers, wholesalers, so that can make calculation of stock deals with a logistic system, so the stock calculations in respect to aimed control and monitoring for every equal interval of period.
- ❖ To export reports and bill in any format like PDF, Word, excel etc., and also support all types of printers like dot matrix, laser, inkjet etc.
- ❖ This software helps you to search any products, stock, and bill details using advance search option.

**Table 2. Intelligence reports can be generated with DMS by distributors for business operations.**

No.	Report Name	No.	Report Name
R 1	Product Management	R 16	Manage Suppliers
R 2	Inventory Product wise	R 17	Product Category wise view
R 3	Inventory/Stock Level	R 18	Discounts view
R 4	Inventory Consolidated	R 19	Inventory Adjustment
R 5	Sales Running Reports	R 20	Count Inventory
R 6	Sales Summary View	R 21	Category wise Report
R 7	Sales Transactions View	R 22	Purchase Entries Report
R 8	Credit / Debit Note Report	R 23	Pricing Analysis
R 9	Sales Analysis Reports	R 24	Best/Worst Product Sales
R 10	Product Sales View	R 25	Top N Ten Customers View
R 11	Godown Information	R 26	Hourly / Weekly Sales View
R 12	View User Roles	R 27	Returning detail and Analysis
R 13	Manage Customers	R 28	Tax Payable/Non-Payable
R 14	Password Resetting	R 29	Ledger and Accounts Reports
R 15	Function Keys	R 30	Overall Search View

#### 4. Screen Shots of the DMS

The Fig. 2 – 5, represents the working follow of the DMS software for a distributor. In Fig. 2. the home page of DMS is provided and all available business related operations are provided in the form of options on it, which sophisticates a distributor on business operations.

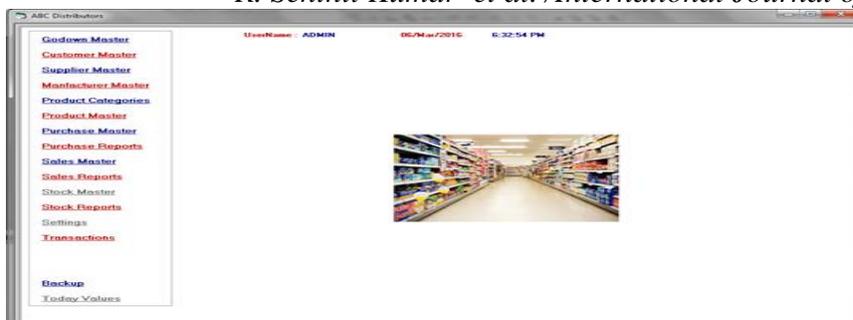


Fig. 2. Home page screen shot of DMS.

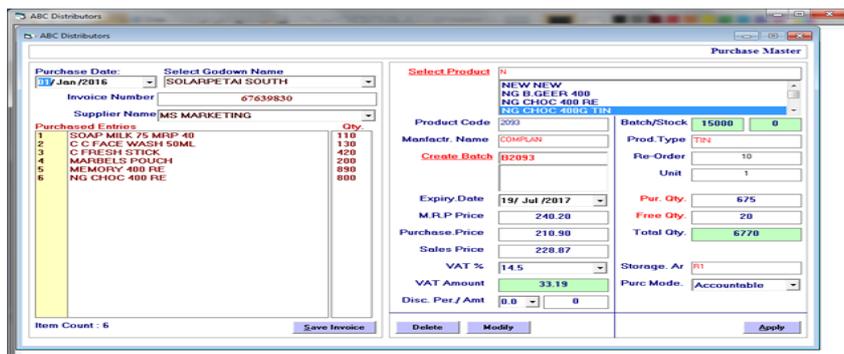


Fig. 3. Purchase master screen of DMS.

The Fig. 3. represents, the possible operations as supplier invoice entry in DMS and moving the entered details in to stock based on batch. The Fig. 4. represents, the customer billing operation of DMS and the Fig. 5. represents, the operation of DMS with respect to daily operations summary of the business accounts.



Fig. 4. Sales master with product billing screen shot of DMS.

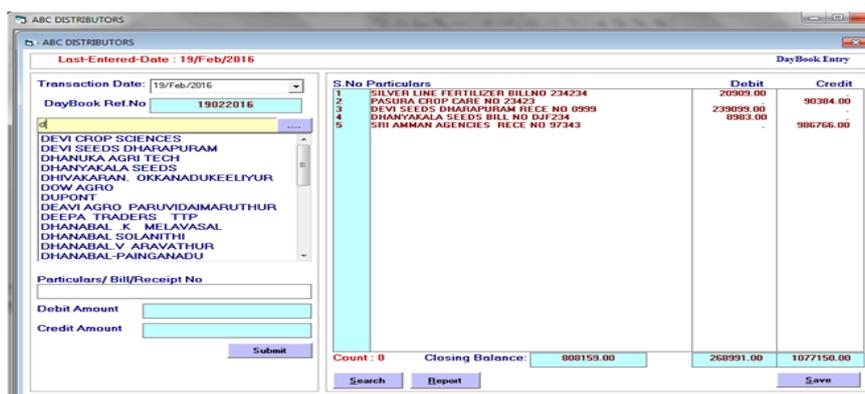


Fig. 5. Day book entry for maintaining daily Ledger and Accounts of DMS.

## **5. Testing and Maintenance**

During the development of system, it is expected that it executed and work correctly. Practically, some errors always occur. The reason for testing an operation is to identify the bugs and remove them. A successful test is one, which finds an error. The main features of the system testing are:

- ❖ **Module Phase:** To ensure each phase of system operation as per specified requirement.
- ❖ **Requirement Analysis:** To analyze and confirm that the system to meet user commitments in easy operations.
- ❖ To ensure and controls integrated and distributed in the system functions as mentioned.
- ❖ Mainly check whether the correct the inputs are fed into the system, it provides exact output.
- ❖ During run time, the incorrect input varies the output, so that each modules level testing is a critical element of software reality and quality and represents the ultimate review of document specification, design, testing, phase level testing, database testing, distributed testing and coding.
- ❖ System administrators should regularly create backups of the system database to ensure organization continuity in the event of system damages or crashes.
- ❖ **Network Phase:** Maintain the database server with continuous support of distributed environment without affecting the transactions and other updates.

## **6. Conclusion**

IT platforms such as DMS coupled with MIS and distributed database management to improve supply chain visibility and thereby have a positive impact on the top line and bottom line. It helps the enterprise in many ways to streamline the working process and makes their work easy and simple. It supports the top level and medium level company's management and it's for every sub system of the enterprise and helps in decision making process through DMS modules with the help of MIS background. The system realizes the purpose of decision management in distributed environment with the continuous help of distributed technology, the powerful technology function has been understanding which leads to enterprise success in future which is the main purpose of the organization.

It also has the benefit of the gradually improvement in system quality and clearly explains that after implementing the MIS function it provides a meaningful report to reach business goals and the implementation of DMS should include long-term visibility for management business model and functions including the information technology landscape with well-designed architecture for scalability, accountability, maintainability and picture perfect integration with

other applications in the enterprise. The success of any system is dependent on terms and conditions of good management system for global purchase and sales in distributed environment; an eye has been kept on making it as user friendly, simple operation, convenient filtering and retrieving of reports as flexible as possible. This software helps to reduce the workload of distributors for managing their day to day activity which results in better sales and inventory management. The significance of this system cannot be overemphasized. It has been tested and found to be reliable. This system can be used by any small scale and medium enterprises around the globe. The client server relationship with distributed database environment of the system even makes convenient, reliable and has more security and meet the user requirement among distributors.

## **References**

1. Suganya, S., Retailers Perception on Sales, Promotion for Beauty and Personal Care Products. *The International Journal of Business & Management*, Vol. 3, Issue 8, 105-113, 2015.
2. Supriya Mahajan, Vansh Raheja.: Study on Management Information System, Its Components and Implementation Process. *IJAR CET*, Vol. 2, Issue 12, 3139-3143, 2013.
3. Marzieh Zare Nazari, Hamid Reza Zare Nazari.: Management Information Systems and Business. *International Journal of Information Science and System*, Vol. 2, Issue 1, 1-8, 2013.
4. Vijayaraj, A., Saravanan, R.: Automated EB Billing System using GSM and Ad-Hoc Wireless Routing. *International Journal of Engineering and Technology*, Vol. 2, Issue 5, 343-347, 2010).
5. Srinivas Nowduri.: Management Information Systems Research for Small and Medium Enterprises: A Sustainability Perspective. *International Journal of Software Engineering and its Applications*, Vol. 8, Issue 8, 201-208, 2014.
6. Jos'e C. Cunhaa, Omer F. Ranab, Pedro D. Medeiros.: Future trends in distributed applications and problem-solving environments. *Future Generation Computer Systems*, Vol. 21, 843-855, 2005.
7. Yinping Long ,Yaonan Zhang, Dawen Yang, Lihui Luo.: Implementation and application of a distributed hydrological model using a component-based approach. *Environmental Modelling & Software*, Vol. 80, 245-258, 2016.
8. C. A. Ardagna, E. Damiani, F. Frati and D. Rebecani, "A Configuration-Independent Score-Based Benchmark for Distributed Databases", *IEEE Transactions on Services Computing*, Vol. 9, No. 1, pp. 123-137, 2016.

9. X. Zhou, K. Li, Y. Zhou and K. Li, "Adaptive Processing for Distributed Skyline Queries over Uncertain Data", *IEEE Transactions on Knowledge and Data Engineering*, Vol. 28, No. 2, pp. 371-384, 2016.
10. A. Turcu, R. Palmieri, B. Ravindran and S. Hirve, "Automated Data Partitioning for Highly Scalable and Strongly Consistent Transactions", *IEEE Transactions on Parallel and Distributed Systems*, Vol. 27, No. 1, pp. 106-118, 2016.
11. Toshiaki Miyazaki, Naoki Suematsu and Daisuke Baba, "Demand-Addressable Sensor Network: Toward Large-Scale Active Information Acquisition", *IEEE Sensors Journal*, Vol. 16, No. 20, pp. 7421-7432, 2016.
12. B. Wanis, N. Samaan and A. Karmouch, "Efficient Modeling and Demand Allocation for Differentiated Cloud Virtual-Network as-a Service Offerings", *IEEE Transactions on Cloud Computing*, Vol. 4, No. 4, pp. 376-391, 2016.
13. S. El Rouayheb, S. Goparaju, H. M. Kiah and O. Milenkovic, "Synchronization and Deduplication in Coded Distributed Storage Networks", *IEEE/ACM Transactions on Networking*, Vol. 24, No. 5, pp. 3056-3069, 2016.
14. J. Zhang, Jian Chen, J. Luo and A. Song, "Efficient location-aware data placement for data-intensive applications in geo-distributed scientific data centers", *Tsinghua Science and Technology*, Vol. 21, No. 5, pp. 471-481, 2016.
15. Laar, D.S., Konjaang, J.K., Tankia, B.A.: Design and Development of a sales management system for SMEs in Northern Ghana. *International Journal of Innovative Research in Advanced Engineering*, Vol. 2, Issue 5, 66-77, 2015.