Remarking

Concept of Data Analysis in Modern Accounting

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Abstract

With the steady progress of technology, computerization of accounting systems is getting more complicated day-by-day, at the same time, the analysis and management of accounting data has become critical factors in organizations. Therefore, traditional accounting information systems obviously cannot be responsive to the decision makers and users. In order to achieve auxiliary enterprise management and decision-making on the basis of the accounting data, it will be vital to seek after upgradation of the systems. Today, OLAP and data warehouse technology are among the most popular and progressed systems in view of a substantial goal, namely, processing and analysis of enterprise data, thus, prepared for effective support in order to survive in competitive markets. Moreover, the OLAP and data warehouse technology provide a better solution for the problems encountered within the operation of financial analysis. This study attempts to examine the role of data in financial analysis system based on OLAP and data warehouse technology, and to give an account of OLAP and data warehousing and a detailed analysis of their financial analysis system design.

Keywords: OLAP, Data Base Management System, Accounting Data, Data Analytics, Database Model.

Introduction

Nowadays in modern world, most of the business organization, continuously adapting to new technology, especially in the area of computerization, due to survive competitive in the business world.One of the greatest significance in any business organization is adopting a robust and powerful accounting system, that are providing the flexibility and scalability needed in a rapid changing environment(Liew, 2010). A major task for an accounting information system is to collect, record, store, and manipulate financial data, and to covert these data into meaningful information for management decision making. (Bagranoff, Simkin, & Norman, 2009). These functions have performed for the different groups in the organization that have concerned about the respective decisions associated with financial accounting, managerial accounting, and tax compliance issues (Hollander, Denna, & Owen, 1999). It will be often required to integrate these diverse systems led to the accountant's appreciation of shared data-bases that provide a cohesive picture of the organization's data, removing duplications and reducing data conflicts (Bagranoff, Simkin, & Norman, 2009).

Table 1
Top 10 out of 299 Databases Ranked by Popularity According to DB-Engines.com in March 2016

Rank			DBMS	Database Model	Score		
Mar 2016	Feb 2016	Mar 2015			Mar 2016	Feb 2016	Mar 2015
1.	1.	1.	Oracle	Relational DBMS	1472.01	-4.13	+2.93
2.	2.	2.	MySQL	Relational DBMS	1347.71	+26.59	+86.62
3.	3.	3.	Microsoft SQL Server	Relational DBMS	1136.49	-13.73	-28.31
4.	4.	4.	MongoDB	Document store	305.33	-0.27	+30.32
5.	5.	5.	PostgreSQL	Relational DBMS	299.62	+10.97	+35.19
6.	6.	6.	DB2	Relational DBMS	187.94	-6.55	-10.91
7.	7.	7.	Microsoft Access	Relational DBMS	135.03	+1.95	-6.66
8.	8.	8.	Cassandra	Wide column store	130.33	-1.43	+23.02
9.	10.	10.	Redis	Key-value store	106.22	+4.14	+9.17
10.	9.	9.	SQLite	Relational DBMS	105.77	-1.01	+4.06

Source: http://db-engines.com/en/ranking

Table 1 shows that with seven entries, relational databases still dominate the top 10 at the time this book was written. Neo4j, the most popular graph database, can be found at position 20 at the time of writing,

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with Titan at position 53. We measure the popularity of a system by using the following parameters:

1. Numerous system on website common interest in the system. Technical discussions about the system frequently. The number of related questions and interested users on the well-known IT-related Q&A sites Stack Over flow and DBA Stack Exchange.
2. Number of job offers, in which the system is mentioned. We use the number of offers on the leading job search engines Indeed and Simply Hired.
3. Number of profiles in professional networks, in which the system is mentioned. We use the internationally most popular professional network LinkedIn.
4. Relevance in social networks. We count the number of Twitter tweets, in which the system is mentioned.

Generally now a day sanac counting information system is a computer-based method due to tracking accounting activity in conjunction with information technology resources ability of managing data. Civilizations have stored accounting data in systematic fashion for at least 6,000 years and now Modern AISs use computers, but much of the same organizing requirements remain-the systematic recording of data, convenient and useful formats, and easy access to required information.Also rise of data make challenge and apply for progressive technology due to managing data, analyze, and emerge Information for decision maker and survive in competition world.In this topic we study new advent technologies in conjunction with data within accounting system.

Objective

The objective of this paper is to study the role of data in financial accounting analysis system based on OLAP and data warehouse technology, and to give an account of OLAP and data warehousing and a detailed analysis of their financial analysis system design within modern accounting. Also we review the application of accounting OLAP in business organization.

Database in Accounting System

Databases perform multiple task in the process of building computer applications (Horowitz, 1991). A database is an immense set of relevant data that are typically stored in computerized, linked files and manipulated by specialized software packages called database management systems (DBMSs) and technically, every collection of data is not a database for instance, the budget or other financial information typically created in spreadsheet programs such as Excel is not a database (Laudon & Laudon, 2012) (Bagranoff, Simkin, & Norman, 2009). The DBMS acts as an interface between application programs and the physical data files. When the application program calls for a data item, such as gross pay, the DBMS finds this item in the database and presents it to the application program (Laudon & Laudon, 2012). Databases have also gained much recognition as a field for computer science research and university teaching (Zaniolo, et al., 1997). Most applications of the database are Banking, Airlines, University, Railways, Finance, Sales, Tele communications, Pay

Roll System, Manufacturing, Human Resources (Pallaw, 2010). In this paper we are concentrate on application of database management system in accounting system.

In many way, the accounting profession have stranded in dilemma, between new information technology and accounting principle so it's required that accountants change environment due to move from the role of exclusively preparing information to the roles of designer, managers and auditors of data base system (Olsen, 2011).

It is pretty tough to exaggerate the significance of databases to computerized Accounting information system. For instance payroll applications must store information about employees, accounts payable applications must store information about suppliers accounts receivable applications must store information about customers. The other reasons that databases is significant are: 1. Valuable information 2.Volume 3.Complexity 4.Privacy 5.Irreplaceable data., 6.Need for accuracy7.Internet uses.

SQL is a language that divided into four types of primary language statements: first is the data definition language (DDL) section and second is the data manipulation language (DML) section, third, Data Definition Language (DDL) section, fourth Transaction Control Language (TCL) Using these languages by define the frame of a database by creating and altering database objects, and manipulate data in a table through updates or deletions. Also control which user can read/write data or manage transactions to create a single unit of work. Actually importance of this is because of many relational databases such as Access support it(Dalvi, 2015).

Analytic Database

Nowadays, the global competition is swiftly growing, organizations demanding to achieve a place in this environment, and undoubtedly the financial analysis is the most critical part, and in addition Financial analysis activity must pursue the scientific development and use the available progressive information and tap the potential value of the information, and study financial analysis system in multidimensional, thereby achieving access to more benefit.The data warehouse support online analytical processing (OLAP) the financial and performance requirements of which are quite different from those of the online transaction processing (OLTP) application traditionally supported the operational database. OLAP is based for financial analysis and data warehouse technology involved has attain certain application and achieved good results (Guo, 2014). An OLAP system make multidimensional analysis enabling you to achieve insight into data through quick, stable, interactive access to a broad variety of feasible views of information. It able you to view your data in the same way you think of your business and to see what is ultimately driving your business (Jhaveri, 2004). On-Line Analytical Processing (OLAP) tools are necessary to deduce beneficial decision support from accounting transaction data (Schwarz, Seifried,, & Winter, 1998).OLAP is part of the large category of business intelligence, which also contain relational database, report writing and data mining (Pareek, 2007). An analytic database is a read-only system that stores historical data on

business metrics (Rouse, n.d.).In Table 2 shows application of OLAP in various are of bussiness

Table 2
OLAP Applications Area

Application Area	Description
Marketing and Sales Analysis	Mostly found in consumer goods industries, retailers, and the financial services industry.
Database Marketing	Determine who the best customers are for targeted promotions for particular products or services.
Financial Reporting	To address this specific market, certain vendors have developed specialist products.
Management Reporting	Using OLAP-based systems one is able to report faster and more flexibly, with better analysis than the alternative solutions.
Balanced Scorecard	It is the marriage of the balanced scorecard methodology and advanced OLAP technology.
Profitability Analysis	Important in setting prices and discounts, deciding on promotional activities, selecting areas for investment or divestment, and anticipating competitive pressures.
Quality Analysis	OLAP tools provide an excellent way of measuring quality over long periods of time and of spotting disturbing trends before they become too serious

Source: (Pareek, 2007)

There are two types of transactions: business transactions, and accounting transactions. Each transaction is usually associated with each of the dimensions in the data warehouse such as customer, product, geography, organizational structure, or standard industry codes.Accounting types of transactions are only added to the data warehouse, never changed.Business transactions can be managed in multiple ways with a data warehouse.Business transactions, depending on the type of business, may each have very long life cycles (Reeve, 2013).

According to (Anandarajan, Anandarajan, & Srinivasan, 2004)Fully-functional analysis for a good accounting OLAP application requires the following characteristics:

Support Sophisticated Analysis

The decision makers use key performance metrics to appraise multiple operations. These metrics need to be presented in a customized manner to facilitate such appraisal (Anandarajan, Anandarajan, & Srinivasan, 2004).

Dimensionally Scalable

Decision makers apply for analyze data from a numerous perspectives or dimensions. We required to evaluate various operations, of various products, in various regions, and for various periods. Accounting analysis take high quality result sets or reports out from wide volumes of transactional data.

Handle Data Volatility

Volatility describes the degree to which dataand data structures change over time. Data with a low level of volatility remain relatively constant as opposed to highly volatile data. Accounting data are mostly operational data and hence highly volatile. Accordingly, an effective accounting OLAP application should be able to handle highly volatile data.

Scalable to Atomic Data

Lowest level of data details required (such as number of goods sold) is computed for effective decision-making. In the case of Accounting, an organization might have bunch of Accounts receivables and payables and expense and revenue accounts, hundreds of branches and multiple products or services. Numbers of transaction combinations occur, and a manager may need to know minutest details. For instance, the accountant would need to know when the sale took place, what were the terms, how often the customer deals with the organization, how is the credit record, etc. Before calculating bad debts. Therefore it is utterly ordinary for an accounting system to have many gigabytes of atomic level information. An accounting OLAP application should be able to measure all gigabytes of atomic information to be effective (Jhaveri, Online Analytical Processing in Accounting, 2004).

Conclusion

Every company's accounting information software holds invaluable information that can help executives to make better decisions. Summarizing transactions to meet information-analysis needs and presenting this information in an easy-to-understand format has always been a challenge for systems administrators. Financial analysis of accounting data must be in line with the method of scientific development, apply advanced information, extract the potential value of the information, deepen financial analysis system within modern accounting, and consequently obtain maximum benefit.

A data analysis based on OLAP can be utilized to analyse data from any accounting system. Over the past few years, the visibility of OLAP vendors and the sophistication of OLAP tools have increased, making OLAP yet another tool that accounting software vendors are using to differentiate their software from those of their competitor. Extracting greater value from one's accounting system by providing more flexibility in the ways that you can manipulate and view your financials data is the goal of OLAP. Accounting vendors have

embraced OLAP in a number of ways as they integrated certain OLAP functionalities into their core product as standard features.

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