

Big Data in Accounting Informaton Systems

Meiryani,¹ Jajat Sudrajat, Zaidi Mat Daud, Banon Amelda

Abstract: Every: *company must utilize existing technology to advance and increase its competitive level with other similar companies. Accounting information systems are required to be able to adapt to technological progress. Accounting information systems use data to process a report that provides information related to financial data for the company. Big data is in principle the same as data that is collected and stored and then analyzed. Technological developments that drive the movement of data towards big data. Characteristics of data that are classified as big data will make processing difficult for humans. Machine learning and artificial intelligence technologies are used to carry out the process. In the accounting process, big data is useful as follows: (1) providing ease and speed of access to transaction data flow; (2) can increase the effectiveness and efficiency of physical document storage costs; (3) changes in forensic audit and accounting techniques. This research is a literature study by examining research texts in international and national journals and accounting development reports in Indonesia.*

Keyword: *Big Data, Accounting, Accounting Information Systems, Information Technology*

I. INTRODUCTION

The development of the use of the internet and information technology has resulted in the formation of a super large and continuous data flow that is difficult to manage, process or analyze using the data processing technology that has been used so far. In obtaining information, of course, a media is needed to accommodate all information obtained from reliable sources. Thus the creation of Big Data in the world of Information Technology.

Big Data itself is a data storage medium that offers unlimited space, as well as the ability to encode and process various types of data very quickly. a lot of events that harm the company for not utilizing existing information or even discarding the information obtained, it is very detrimental to the company because it cannot maximize the function of existing information to facilitate the decision-making process, strategic planning, and operational planning. Things like this must be prevented by good handling and more attention so that the information can be of maximum benefit to the company. At present many companies have realized the importance of data management by utilizing big data. The importance of Big Data not only revolves around the amount of data an organization has, but the important thing is how to process internal and external data.

Big data usually includes data sets with a size beyond the ability of software that can be used to store, manage, and process data in a short amount of time. The size of the Big Data is now increasing, starting in 2012 starting from a dozen

¹ Accounting Department, Faculty of Economics and Communication, Bina Nusantara University, Jakarta, Indonesia 11480
meiryani@binus.edu

BINUS Entrepreneurship Center, Management Departement, BINUS Business School Undergraduate Program, Bina Nusantara University, Jakarta, Indonesia 11480

Department of Accounting and Finance, Faculty of Economics and Management, Universiti Putra Malaysia

Accounting Department, Faculty of Economics and Communication, Bina Nusantara University, Jakarta, Indonesia 11480

terabytes and petabytes of data in a single data set. There are also various dimensions related to Big Data starting from Volume, Variety and Velocity. Of the three dimensions, there are many differences from Big Data itself that distinguishes one another and has different job roles. Over the years the change will increase with the flow of times. This definition is intentionally made subjective so that it can be combined by the definition of Big Data which still does not yet exist. The size of big data is around a few dozen TeraByte up to several PetaByte depending on the type of Industry. The contents of Big Data are Transactions + interactions and observations or you can say everything related to internet networks, communication networks, and satellite networks. IBM concluded that big data is data that has a very large scope of information, a real-time information model, has a large volume, and the scope of information is not focused on small industries or large industries, but all of them are small industries. and large.

II. LITERATURE REVIEW

Companies need to process Big Data for business decisions that must be fast. For example, to find out the habits and preferences of customers without having to ask questions, know the tastes of news portal readers on the web to be adjusted to the advertisements displayed, arrange flight travel so as not to delay, control outbreaks of disease, and so on. To process Big Data into more useful information, a "big" program is needed, which means it is not a "normal" program. If conventional data so far only contains ordinary text and numbers such as financial data, then it is sufficient to be processed with a regular database as well, for example MS Access, MS SQL Server, and others which so far have only been to process structured data. Big Data cannot be processed only with a conventional database program called SQL (Structured Query Language) or RDBMS (Relational Database Management System). Big Data requires a database program that supports NoSQL (Not only SQL), which is able to process unstructured data. Big data uses inductive statistics and concepts from identification of non-linear systems to deduce laws (regression, non-linear relationships, and causal effects) from large data sets to express relationships, dependencies, and to predict outcomes and behaviors. Big data is a larger and more complex collection of data, especially from new data sources. This data set is so large that traditional data processing software cannot manage it. Big data is a collection of data that has a large scale so that it cannot be processed using traditional traditional tools and must use new methods and tools to get value from this data, by way of clustering, partitioning, and warehousing in the data warehouse. Big data refers to data sets whose size is beyond the ability of database software tools to capture, store, manage and analyze. The size of big data is around a few dozen TeraByte to several PetaByte depending on the industry's need for that data. One of the easiest explanations for big data is the collection and use of information from various sources to make better decisions. Big data can be regarded as a concept of our ability to collect, analyze, and understand the large amount of data that comes every day.

Utilization of Big Data that often use large companies

Increase Sales

Usually the data can be used to increase the company's sales, including what I like, who I like, how I feel, where I am, who I am with, what I have bought, what I want to buy, dreams what I want to have, and other things. These data are used by companies to assess products such as what needs to be created and produced by the company so that consumers educate and buy products made by the company.

Customer Relationship

Sometimes we will get a birthday wish from several product Brands, or sometimes we will get product promo offer shipments from several brands even though we haven't used their products for a long time. This is part of the Customer

Relationship Management (CRM) process. This is one way for companies to foster the loyalty of their customers towards the company's brand and this can lead to customer buybacks of the company's brand. This is what is expected by the company. This data is usually measured from when we are having a birthday, our favorite artist, our favorite items, or things we like. This data is used as a benchmark by companies to foster close relationships with their brand consumers. So consumers can be a hero for the company's brands among other product brands.

Employee Relations

Human Resources (HR) is the biggest asset for the company. And this is an important concern for the company at this time. And an important factor for companies to increase employee loyalty to the company. Usually the company will collect data on the level of satisfaction and dissatisfaction from its employees. The company will analyze the data into a valuable value for the company, because that way the company can improve the performance of its employees with programs provided by the company. This is usually the task of the Department of Human Resources (Human Resources) to design programs that provide benefits to the level of employee job satisfaction and increased productivity. This could have an impact on his loyal employees and not young to move to other companies. In the end the important role of Big Data provides information for companies to innovate in running their business. Just how the company to collect and process Big Data.

III. DISCUSSION

Big Data and Benefits for Business

2012 was the year that Big Data began to be a hot topic among IT practitioners, companies and the media. Even though Big Data has been around for a long time, it is still strange and hidden because of the time and work process to extract it. Many are not yet aware of the big potential of Big Data. Big Data can be understood as very large amounts of data on internet protocol traffic such as internet user accounts, banking transaction data, sales transactions, stelit images, GPS, camera recorders, logs, communication between users, trillions of posts, personal documents, government documents, company documents, organizational documents, videos, images, Mp3 audio, email data, data providers and customers, online games and other internet applications. So much is not the amount of data?

Benefits of Big Data

Here is a review of some of the benefits of Big Data for a business:

1. Can be considered as an investment, where the real implications can only be felt if the process of research and interpretation of big data. The company uses the results of the Big Data analysis to obtain business value. The results of this analysis are then applied to produce a solutive and implementative business strategy. In addition, to optimize operations and recognize inefficiencies to apply predictive analytics to anticipate events such as customer fading, product failure or declining quality, and financial fraud.

2. Companies can expand after seeing customer potential and user behavior.

3. As a gold mine for data experts because not a few data providers sell their analysis data at high prices.

4. HR companies use Big Data to comprehensively recognize employees, predict employee behavior, reduce spending, and create business strategies that have positive implications. An example is the use of LinkedIn to track and analyze the abilities, knowledge, experience, and career footprints of employees, former employees, and prospective employees.

5. Overall, Big Data makes business decision-making based on scientific and measurable data, not based on common sense, intuition, or practical wisdom.

Big Data and Business Intelligence are used by all parties from government agencies to community institutions and are also used by private institutions which have now become successful by using Big Data and Business Intelligence, following the use of Big Data and Business Intelligence:

IV. CONCLUSION

Big Data is widely used by all people and all people. Big Data is also a very profitable business project for everyone, we can also get profits from a variety of big data businesses on social networks or online businesses and certainly many who need the internet in modern times like this. Big data also has 3 dimensions, namely Volume, Variety and Velocity which can help Big Data performance.

there are four important roles of accounting information systems and the role of accountants in guarding the economy and business sector in the digital age. As a decision maker, accountants must take responsibility for being able to provide timely and accurate information to save the company's business.

Databases used in personal computers are growing rapidly. Accountants are involved with databases through data entry, data processing, query creation or auditing. The database provides the following benefits for entities: (1) Data integration; (2) Data sharing; (3) minimal data redundancy data; (4) data inconsistencies. The role of accountants in accounting information systems, is as an advisor for business decision making, and as a user of digital systems, accountants act as controllers of applications, software, to process guards and people. Technological risks and opportunities need to be identified and well understood by professionals in the midst of global IT trends, so that the business world can grow safely and optimally. In the perspective of technological opportunities there is the concept of big data and risk analysis while in the perspective of technological risk evolves the dynamics of cyber security. Accounting information systems must benefit from digital information, or competitors who benefit from IT-based information.

V. ACKNOWLEDGMENT

This work is supported by Research Technological Transfer Office (RTTO) BINUS University 2020 funding, as a part of Research Grant of Penelitian Internasional Binus (PIB)/ International Binus Research (PIB) entitled "Quality of Accounting Information Systems and Their Emerging Contributions of Public Listed Companies".

VI. REFERENCES

[1] Azhar Susanto & Meiryani. The Impact of environmental accounting information system alignment on firm performance and environment performance: a case of small and medium enterprises of indonesia. *International Journal of energy economics and policy* 9(2), pp. 229-236.

[2] Azhar Susanto 2013. *Accounting Information Systems: Structure-Risk-Control-Development*. Bandung: Lingga Jaya.

[3] Bagranoff, Nancy A. Simkin, Mark G. & Norman, Carolyn Strand. 2010. *Core concept of accounting information systems*. 11th Edition. Jhon wiley & sons, inc.

[4] Bagranoff, Nancy A. Simkin, Mark G. & Norman, Carolyn Strand. 2012. *Core concept of accounting information systems*. 11th Edition. Jhon wiley & sons, inc.

[5] Bodnar , George H. & William S. Hoopwood. 2010. *Accounting Information Systems*, Tenth Edition. NJ:

Prentice Hall.

- [6] Dellon, W.H. & Ephraim R. Mclean. 1992. The Delon and Mclean Model of Information Systems Success: A Ten Years Update, *Journal of Management Information Systems*/spring 2003. Vol. 19, No.4. Pp.9-30.
- [7] DeLone, William H. Mclean, Ephraim R. 2003. The DeLone and McLean Model of Information Systems Success: A ten Year Update, *Journal of Management Information Systems*. Volume 19, No 4, pp. 9-30.
- [8] Deloitte Access Economics. 2015. SMEs trigger Indonesia's progress: Nusantara Growth Instrument. Management Report.
- [9] Hall, James A. 2011. *Accounting Information System*. Sixth Edition. South Western : Cengage Learning.
- [10] Hair, J.F.JR. Bush, R.P and Ortinau, D.J. 2003. *Marketing Research Within a Hall James A.2011. Accounting Information System*. 7th Edition: South-Western Publishing Co.
- [11] Heidmann, Marcus. Schaffer, Utz & Strahringer, Susanne. 2008. Exploring the Role of Management Accounting Systems in Strategic Sensemaking. *Information Systems management*. Volume 25. Pp.244-257.
- [12] Horan T A, Abhichandani. 2016 " EGOVSAT: Toward a Robust Measure of E- Government service Satisfaction in Transportation," International Conference on Electronic Government, Ottawa, Canada.
- [13] Hurt, Robert L. 2008. *Accounting Information System: Basic Concept & Current Issues*. McGraw Hill.
- [14] Jogiyanto, H.M. (2011). *Business Research Methodology*. Fourth Edition. BPFE. Yogyakarta.
- [15] Gelinas, Ulric J. dan Dull, Richard B.. 2012. *Accounting Information System*. International Student Edition. Thomson South Western.
- [16] Laudon, K C. & J P. Laudon. 2012. *Management Information System : Managing The Digital Firm*. 12th Edition. NJ: Prentice-Hall.
- [17] Lubbe, Sum. 2002. *The Economic and Social Impacts of E-commerce*. Idea Group Publishing.
- [18] Khosrow, Mehdi Pour. 2004. *E-Commerce Security: Advice from Experts*. Melalui <https://books.google.co.id/books?id>.
- [19] Kuhn, Michael dan Remoe, Svend.2005. *Building the European Research Area: Socioeconomic Research in Practice*. via <https://books.google.co.id/books?id>.
- [20] Khalil Mahmoud, 2012, *American Journal of Applied Sciences: The Effect Of E- Commerce on the Development of the Accounting Information Systems in the Islamic Banks*, Science publication,9,9, Amman, Jordan.
- [21] Kothari, C.R. 2004. *Research Methodology: Methods and techniques*. Second Revised edition. New Age International Publisher.
- [22] Mcleod, Jr. Raymond dan Schell, George P. 2007. *Management Information Systems*. Tenth Edition. Pearson Prentice Hall. New Jersey.
- [23] McLeod, Raymon & Schell, George P. 2008. *Management Information Systems*. 10th Edition. Pearson Prentice Hall USA.
- [24] Meiryani; Azhar Susanto; Dezie Leonarda Warganegara. 2019. The Issues Influencing of Environmental Accounting Information Systems : An Empirical Investigation of SMEs in Indonesia. *International Journal of Energy Economics and Policy*. Vol.9,No.1.
- [25] Meiryani and Azhar Susanto. 2018. The Influence of Information Technology on The Quality of Accounting Information System. *ACM International Conference Proceeding Series*. Pp.109-115.

- [26] Romney, Marshall B., dan Steinbart, paul J. 2012. Accounting Information Systems.Global Edition. Twelfth Edition. England: Pearson Education Limited
- [27] Tesong Kim. 2012. Situs E-Commerce Belum Bebas dari Barang KW. via <http://tekno.kompas.com/read/2012/06/09/15293675/Situs.E-Comm..>
- [28] Turner, Leslie dan Andrea Weickgenannt. 2008. Accounting information system, controls and process. Jhon wiley and sons, inc.
- [29] Sacer, Mamic Ivana et al. 2006. Accounting Information Systems as The Ground for Quality Business Reporting, IADIS International Conferences E-Commerce, Pp.59-64
- [30] Sadera, Darshana, Gable, Guy dan Chan Taizan 2004. A Factor and Structural Equation Analysis of The Enterprise Systems Success Measurement Model. In Proceedings American Conference on Information Systems, New York, USA.
- [31] Seddon B Peter. 1997. A Respectification and Extension of the Delon and Mc Lean Model of IS Success departemen of information System the University Melbourne Victoria.
- [32] Sekaran, Uma dan Bougie, Roger. 2013. Research Methods for Business: A skill- Bulding Apporoach. Six Edition. Jhon Willey & Sons Ltd.
- [33] Scott, George. 2001. Principles of management Information System, Mc Graw hill, Inc.
- [34] Stephanus Tumbelaka. 2013. Banks Need Additional Liquidity. Via <http://dci.indonesia.com/news/bank>.
- [35] Stair, Ralph M. & George W. Reynolds. 2012. Principles of Information Systems, Course Technology. 9th Editions. NY:Mc-Graw-Hill.
- [36] <https://iprice.co.id/trend/insights/laporan-kuartal-i-2018-industri-e-commerce-indonesia/>
- [37]