

Chapter 24

Big Data and Its Role in Facilitating the Visualization of Financial Analytics

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ABSTRACT

The business use of data analytics is growing rapidly in the accounting environment. Similar to many new systems that involve accounting information, data analytics has fundamentally changed task based processes particularly those tasks that provide inference, prediction and assurance to decision makers. Big Data analytics is the process of inspecting, cleaning, transforming, and modeling Big Data to discover and communicate useful information and patterns, suggest conclusions, and support decision making. Big Data now pervades every sector and function of the global economy. These essays focus on the uses and challenges of Big Data in accounting (measurement) and auditing (assurance). The objective of this chapter is to examine how Big Data analytics will impact the accounting and auditing environment. This is important to practitioners as well as academics because they will be using data analytics in accounting and auditing tasks and will need to have an in-depth familiarity with financial analytics to effectively accomplish these tasks and make effective and efficient decisions.

INTRODUCTION

The term Big Data refers to the analysis of a significantly large collection of data that may contain user data, sensor data, video and voice or machine data. Analyzed Big Data can deliver new business insights, open new markets and create competitive advantages for the practitioners and scholars. It consists of data sets that are of large magnitudes (Volume), large collections of data with diverse representations include structured, semi-structured or unstructured data (Variety), and should be processed rapidly (Velocity).

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Big Data will have increasingly important implications for Accounting even as new types of data become accessible. The video, audio and textual information made available via Big Data can provide improved Managerial Accounting, Financial Accounting and Financial Reporting practices. In Managerial Accounting, Big Data will contribute to the development and evolution of effective Management Control Systems and Budgeting processes. In Financial Accounting, Big Data will improve the quality and relevance of Accounting information thereby enhancing transparency and stakeholder decision making. In reporting, Big Data can assist with the creation and refinement of Accounting standards helping to ensure that this profession will continue to provide useful information as the dynamic, real time global economy evolves. (Warren et al., 2015)

Big Data is one of the most important developments in management practice today with McKinsey Global Institute (2011) arguing that it will fundamentally change business stating that “the market for Big Data will reach \$16.1 billion in 2014, growing 6 times faster than the overall Information Technology (IT) market.” given the growing significance of Big Data as a business tool.

Given enough time, market forces will overcome the imbalance between supply and demand for the talent in Big Data with many universities now creating degree programs and stand-alone courses in this area. The AACSB is taking a lead by calling for Accounting programs to “integrate current and emerging Accounting and business information technologies throughout the academic curricula”. In particular, Standard A7 calls for “the development of skills and knowledge related to Data Creation, Data Sharing, Data Analytics, Data Mining, Data Reporting and Storage within and across organizations”.

The same competitive forces will likely see the Big Data repositories being gathered and made available for users so that Accountants and others can concentrate on analyzing rather than collecting data. Media data on businesses from Twitter, Facebook, Tumblr, Instagram and the like sells those data to clients. In short, there is an increasing and accelerating trend for Data Scientists in Big Data usage which Accountants can take advantage of and that will in the long run at least help the profession overcome the very real obstacles that also exist today.

Accounting data has many important features such as wide variety of sources, strong continuity, large amounts of data, long storage periods and complex types. Therefore, while entering, it should be strictly audited. Although its work is relatively simple, accuracy requirements are very high and the form of information output is varied. Accounting data is directly associated to business data and it cannot exist out of business data. Accounting data has intangibility and sticky nature. If companies are willing to participate in globalization, networking, information based economic competition, then they must integrate Accounting and financial data into Information Network Organization. However, if companies try to transform into a network oriented enterprise, they must be able to effectively collect, classify, process and analyze information. Currently, while facing the task of analyzing large-scale data, companies inevitably require revolutionary changes from traditional forms of Information Model in Accounting. The emergence of Cloud Accounting is the appropriate method to solve this problem and results in the generation of huge amounts of geographically dispersed data from around the world in different large scale data formats.

INTRODUCTION TO BIG DATA IN ACCOUNTING AND AUDITING

Accounting records are “records of financial transactions, or of events expressed in monetary terms, made for the purposes of accounting” (Accounting Dictionary, 2014). Although such records are historically

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