**TITLE**

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**Introduction**

**Big data** is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, and information privacy. The term often refers simply to the use of predictive analytics or other certain advanced methods to extract value from data, and seldom to a particular size of data set. Accuracy in big data may lead to more confident decision making. And better decisions can mean greater operational efficiency, cost reduction and reduced risk.

The vast proliferation of data and increasing technological complexities continue to transform the way industries operate and compete. Over the last two years, 90 percent of the data in the world has been created as a result of the creation of 2.5 quintillion bytes of data on a daily basis. Commonly referred to as big data, this rapid growth and storage creates opportunities for collection, processing and analysis of structured and unstructured data.

Following the 3 V’s (Volume, Variety and Velocity) of big data, organizations use data and analytics to gain valuable insight to inform better business decisions. Industries that have adopted the use of big data include financial services, technology, marketing and health care, to name a few. The adoption of big data continues to redefine the competitive landscape of industries. An estimated 89 percent of enterprises believe those without an analytics strategy run the risk of losing a competitive edge in the market.

Financial services, in particular, have widely adopted big data analytics to inform better investment decisions with consistent returns. In conjunction with big data, algorithmic trading uses vast historical data with complex mathematical models to maximize portfolio returns. The continued adoption of big data will inevitably transform the landscape of financial services. However, along with its apparent benefits, significant challenges remain in regards to big data’s ability to capture the mounting volume of data.

**3 V’s of Big Data**

The 3 V’s are fundamental to big data: volume, variety and velocity. Facing increasing competition, regulatory constraints and customer needs, financial institutions are seeking new ways to leverage technology to gain efficiency. Depending on the industry, companies can use certain aspects of big data to gain a competitive advantage.

* **Velocity** is the speed at which data must be stored and analyzed. By 2016, there will be an estimated 18.9 billion network connections by 2016, with roughly 2.5 connects per person on Earth. Financial institutions can differentiate themselves from the competition by focusing on efficiently and quickly processing trades.
* The increasing volume of market data poses a big challenge for financial institutions. Along with vast historical data, banking and capital markets need to actively manage ticker data. Likewise, investment banks and asset management firms use voluminous data to make sound investment decisions. Insurance and retirement firms can access past policy and claims information for active risk management. It is very common to have Terabytes and Petabytes of the storage system for enterprises. As the database grows the applications and architecture built to support the data needs to be reevaluated quite often. The big **Volume** indeed represents Big Data.
* Big data can be categorized as unstructured or structured data. Unstructured data is information that is unorganized and does not fall into a pre-determined model. This includes data gathered from social media sources, which help institutions gather information on customer needs. It will be easy to do so if we have data in the same format, however it is not the case most of the time. The real world has data in many different formats and that is the challenge we need to overcome with the Big Data. This **Variety** of the data represents Big Data.

**References**

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