


## Chapter 77

# The Components of Big Data and Knowledge Management Will Change Radically How People Collaborate and Develop Complex Research

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### ABSTRACT

*Emerging as a rapidly growing field, big data is already known for promising success and having considerable synergies with knowledge management. The common goal of this collaboration is to improve and facilitate decision making, fueling the competition, fostering innovation, and achieving economic success through acquisition of knowledge to various applications. Knowledge in the entire world or inside any organization has already expanded itself in various directions and is exponentially increasing with time. To withstand the current competitive environment, an intensive collaboration of knowledge management with different approaches and algorithms of big data is required. Classical structuring is becoming obsolete with the increasing amount of knowledge components.*

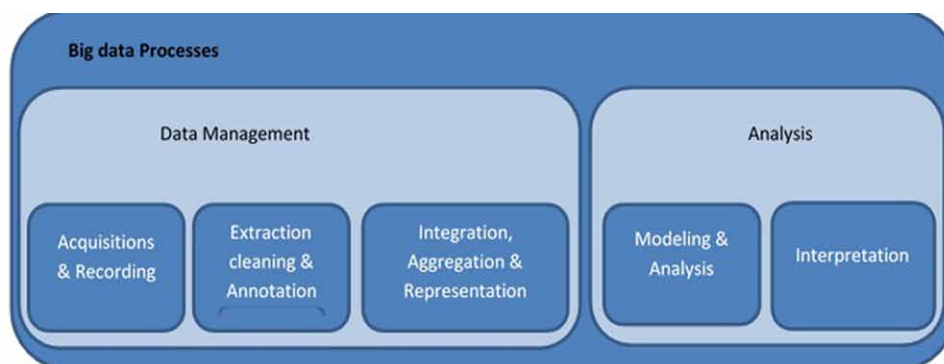
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## INTRODUCTION

By the advancement in technology, the life of people of present generation is very relaxing and they completely enjoy their life. While on the other hand, if we try to compare the lifestyle of the people living in 19th century or earlier, it was very poor, so here we can see the drastic change in the lifestyle of the people in a small amount of time, which is only possible because of the big data and knowledge management. We can also say that in the charming lifestyle of the present generation, there is a major role played by the big data and the knowledge management system. Over the years knowledge management has evolved to integrate information from multiple sources and perspectives. The data integration and manipulation paves the way for decision making. Decisions made by various organizations are not just based on single factor but it is the cumulative result of multiple driving forces. Considering the financial decisions of organization, dealing with revenues, salaries, interest rates alone would not be effective for deciding and predicting the solutions, Such factors must be comprehensively supported with the information of where and when to invest along with the proper consideration of the geographical locations of the market.

Data can exist in multiple forms, it simply has its existence and has no significance beyond that. Data that has some meaning is information. This information may be put to use or can just be stored without practically applying it to some area. Data gathering brings along with it all types of data or unstructured data which is to be separated, segregated and formalized to bring out something informative from the same. Unstructured data does not follow any specific format and cannot be put to use directly. It has to be organized and structured so that it can be put to use and can provide some valuable information within the resources. Structured data has defined length and has format specific. A document containing data with date and indexes is example of structured data in traditional databases. A recent survey (US San Diego, 2018) declares 20% out of 100% as the structured data, which is further categorized under machine generated, and human generated data. Sensor data, weblog data, point of sale data are typical examples of machine-generated data gathered from web activities and product purchasing. Human generated data include input data such as online information; click stream data generated on clicking a website link. Another term coined for data that lies somewhere in between structured and unstructured data is semi-structured data. Semi-structured data can be understood as the data that has self-describing structure. It is the kind of data that does not conform to any data model typically associated with relational databases. Typical examples of semi-structured data can be XML and JSON files.

*Figure 1. Approximate percentage distribution of digital data*



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