

Understanding Big Data to Improve Knowledge Management Practices: Gaps and Limitations

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Abstract: People can access to large number of data in single day than most people that have access to data in the earlier decade. This data is made in numerous structures and it highlights the advancement of big data. Big data in organizations have transformed the way organizations across industries implement new approach to handle huge amount of data. It implies change in skills, structures, technologies and models. Organizations depend to this data to accomplish particular business needs. The challenge is the way to access this data to be viewed as pertinent for the particular organizations activities because determining relevant data is a key to delivering value from massive amounts of data to support organizations knowledge. This study reviews previous study to understand the gaps between big data and knowledge management toward the implication of knowledge management in organizations. The aim is to identify the gaps and limitations in order to improve the big data awareness and knowledge management practices.

Key words: Big data, knowledge, knowledge management, practices, support

INTRODUCTION

Organizations refer to technologies to create, stores, retrieve and distributes knowledge in order to support their decision-making (Esposito *et al.*, 2015; Erickson and Rothberg, 2014). Technologies such as Knowledge Management System (KMS) allow organizations to gain vast amounts of business intelligence. It allows support to report, store current and historical data and consolidate data for management analysis and decision-making.

Researchers were prepared to break down information, yet with the large volume of data created make it harder to recognize which data is pertinent to the organization's particular movement. It represents an issue on the most proficient method to successfully use this data to strengthen basic leadership forms (Izhar *et al.*, 2013).

Big data is vital to organizations since more data can make more precise examination which can prompt to more effective decision-making. Exploiting big data is a test for organizations (Berber *et al.*, 2014). Keeping in mind the end goal to guarantee the adequacy of the data organizations need to store the data dependably over various databases. Once the data is stored and when the necessities emerge, the organization must figure out how to separate the data once more, distinguish which data is

required, amass it and dissect it. The challenge now is the way to catch pertinent data from this enormous measure of data which can convey qualities to bolster organizations learning. The main problem is not how the organizations will secure the immense volume of data but how they can saddle the estimation of this data that important (Davenport and Dyche, 2013).

Even though there are studies have been done in knowledge management, there is still little debate these days about how big data play it roles in knowledge management for efficient decision-making compare to could computing, data warehouse and data mining (Polato *et al.*, 2014; Zhi *et al.*, 2011; Esposito *et al.*, 2015).

There is yet no consensus about how best to incorporate big data and knowledge management in the organizations to improve business analytics and in-time decision-making. The aim of this research is to review previous study on big data and knowledge management in order to evaluate the level of big data awareness toward the implication of knowledge management practices.

MATERIALS AND METHODS

Big data: Big data is a somewhat ambiguous term that depicts the utilization of new instruments and methods to advanced data on a size and scale well past what was

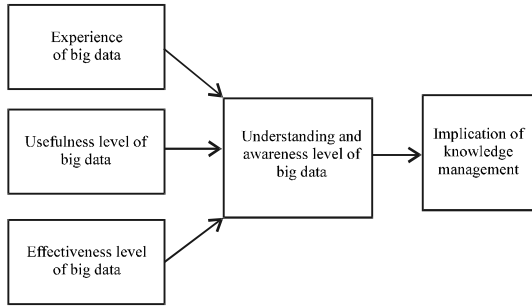


Fig. 1: Future work

conceivable with customary methodologies. Big data are regularly including datasets that are so expansive and complex that they require propelled information stockpiling, administration investigation and perception technologies (Chen *et al.*, 2012). Polato *et al.* (2014). concentrated on the significant learning that can be recovered from petabyte scale datasets that prompted to the advancement of answers for process data in light of parallel and conveyed figuring. The researchers built up a model-based PC to process data from extensive datasets.

Based on the discussion, we can see that most of the studies focused on big data process from large amount of datasets. Organizations need to comprehend the stream of their information keeping in mind the end goal to process it into significant data. Data flow is an ordered sequence which is consecutive, high-speed infinite and time varying. For example, it's an incredible significance in web administration, web security and web analyze. In any case, with the quick advancement of web innovation, the quantity of web applications in organizations continue rising and the data is developing exponentially which make it hard to manage (Zhi *et al.*, 2011). Esposito *et al.* (2015) examined on big data investigation. The authors concentrated on a basic perspective to build the working edge of both open and private undertakings. The study represents the next frontier for their innovation, competition and productivity in big data era. Big data are normally created in various divisions, regularly topographically dispersed all through the world and are described by an expansive size and assortment (Fig. 1).

RESULTS AND DISCUSSION

Knowledge management: Organization should be more predictable towards the advancement and trade of learning inside and among organizations. Top management plays the essential part in impacting learning sharing society among employees (Manyika *et al.*, 2011).

Table 1: Previous scope of existing literature on big data

Big data				
Researchers	Creation	Computing	Internet	Tools Analysis
Esposito <i>et al.</i> (2015)				✓
Polato <i>et al.</i> (2014)		✓		
Zhi <i>et al.</i> (2011)			✓	
Lohr				✓
Chen <i>et al.</i> (2012)	✓			
Perrons and Jensen (2015)	✓			

Table 2: Integration between big data and knowledge management.

Researchers	Big data	Knowledge management
Erickson and Rothberg (2014)		✓
Polato <i>et al.</i> (2014)	✓	
Zhi <i>et al.</i> (2011)	✓	
Esposito <i>et al.</i> (2015)	✓	
Rajpathak and Narsingpurkar (2013)		✓

Table 3: Research on big data in knowledge management.

Researchers	Data retrieval	Data enterprise	Knowledge management
Chang <i>et al.</i> (2011)	Yes	No	No
Golovchinsky <i>et al.</i> (2009)	Yes	Yes	No
Surachai and Banditwattanawong (2015)	No	Yes	No
McFedries (2008)	Yes	No	No
Yoo <i>et al.</i> (2009)	No	No	No
Chow <i>et al.</i> (2009)	Yes	Yes	No
Rao <i>et al.</i> (2012)	No	No	No
Huang and Dao (2008)	No	Yes	No
Yepes <i>et al.</i> (2010)	Yes	No	No
Sharma and Osei-Bryson (2008)	No	No	No
Mansingh <i>et al.</i> (2009)	No	No	No
Han and Park (2009)	No	Yes	No
O'Leary (2010)	Yes	Yes	No

This might enhance hierarchical execution. Knowledge sharing or exchange of learning is the principle component in the association so as to produce upper hands and enhance hierarchical execution when representatives overwhelmingly substitute their insight. The idea of Knowledge Management (KM) has been actualized in the organizations and turning out to be more well known in many organizations in Malaysia. Nearly the entire world keeps on relocating towards a learning based economy, KM has developed as a system for catching and dealing with the scholarly resources of an association as a vital component to maintaining upper hand (Hussain *et al.*, 2004). Along these lines, many organizations remember it as an esteem strategy and have started to strengthen this practice to address business issues and goals. According to recent research findings, KM is one of the foundations for competitive advantage (Kang, 2007; Kiessling *et al.*, 2009; Massa and Testa, 2009).

There is no real way to figure out if it is conceivable to apply knowledge management, no real way to make sure that arranged activity will accomplish learning administration adequacy and no chance to get of figuring out whether understanding big data is relevant toward the implication of knowledge management (Table 2 and 3).

Based on Table 2, there is no study incorporate big data and knowledge management. There is no significant finding focus on big data awareness that can lead to the knowledge management practices.

CONCLUSION

Most of the data we think about from an enterprise perspective is sort of integrated, it's transactional, it's a call center call or it's a web transaction or it's a sale or it's a quote or it's a piece of data about a product. Nothing in technology stands still and this is especially true for the world of data and analytics. Therefore, it is important to understand the big data in order to improve knowledge management practices. This study provide an overall picture of managing large amount of data that can lead to better knowledge management practices.

RECOMMENDATIONS

In the future, we will propose a framework to address these issues. We will develop a framework incorporating big data and knowledge management. We identify different variables to investigate the level of big data awareness in organizations. Since benchmarking is not the focus of this research, within the study is broadly defined to include the activities necessary to translate the organization's strategic plan into specific project plans which might include the understanding of big data and knowledge management. It is important to identify the gaps between big data and knowledge management that could play a massive part in managing knowledge in the organization. Even though many studies have been done on big data but no significant finding shows the relationship between big data and knowledge management. We focus on the important of understanding the process of managing big data that could lead to effective knowledge management practices.

The proposed framework is initially contains three main variables based on big data awareness and success factors. The originality of this framework lies in the creation of the big data integration 'road-map' that contains references to concepts and properties from three different variables that relevant to evaluate the level of understanding and awareness of big data. This road-map will enable accurate integration between big data and knowledge management.

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