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Relationship between database systems and intellectual capital

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Abstract

Intellectual capital owned by the company can be interpreted as capital or shares. Big data is a collection of data that has a large volume; for example, big data contains data on social media, and the content of big data itself is the latest data obtained from real-time results, and its scope is not only

based on industry. Only small, but also includes large industries in it. This paper discusses the relationship between the database and intellectual capital with the literature review research method, which will see how much influence it has on the company.

Keywords: Intellectual Capital, Big Data, System

Introduction

Use of technology is currently not only used by the upper class but has reached many levels of society, and corporate groups also use this sophistication to facilitate the decomposition of capital with a database system. However, this does not mean that the emergence of Big Data can simplify and reduce the risk or loss of data quality; it seems that the BD era does not change the risks and opportunities highlighted in the previous literature but is seen to strengthen the relevance of risk significantly. Data quality or the risk of poor management of privacy concerns are increasingly linked to a company's reputation.

Discussion

1. Intellectual Capital

The notion of *intellectual capital* itself still has many different meanings. There is no specific definition, and there is still a broad understanding of the need for support and relationships between various elements (Bukh Larsen & Mouritsen, 2001). Some scientists define intellectual capital as follows:

- Intellectual capital is elusive, but if found and utilized, it will provide organizations with an updated source base to be able to compete and win
- Intellectual capital is the definition embedded for the combination of intangible assets from the market, intellectual property, and infrastructure, as well as the human center that composes the company's functions
- capital Intellectual intellectual material (wealth, experience, intellectual property, information) that can form property. it is an indication of collective determination or a valuable set of knowledge.
- Intellectual capital can be said to be part of the company's market value as well as the market premium

Intellectual capital can be interpreted as shares or capital, which is knowledge owned by the company. However, it is also the result of the transformation of knowledge or knowledge itself created in assets or intellectual property rights.

2. Database System

Collection of related data items organized according to a particular schema or arrangement, stored on computer hardware and software to be manipulated by specific uses. In short, a database is a collection of files/tables that make up a database. Data is observations that have not been processed and displayed in context and presented to be useful for specific users. While information is data that has been processed and presented in a context and display that is useful for specific users, information can be presented in the form of tables, graphics, or audio.

So the definition of a database is a collection of related data and stored in electronic media to meet various needs. In contrast, a database system consists of a collection of interconnected tables and programs that allow multiple users/other programs to access and manipulate these tables.

Why Database is Needed:

- One of the critical components in information systems because it is the basis for providing information
- Determining the quality of information: accurate, timely, and relevant. Information can be said to be valuable if the benefits are more effective than the cost to get it
- Reducing data duplication (data redundancy)
- Data relations can be improved (data reliability)
- Reducing the wastage of external storage space (Irmansyah, 2003) ^[6].

3. Big Data

According to experts (Paul, Tom, George, Dirk, & Eaton), big data cannot be processed manually because it will take a long time and be challenging to analyze using manual techniques. Meanwhile, according to dumbill's view, Big Data is data that exceeds the processing capacity of existing conventional database systems. In other words, the data has a load that is too large, does not match the capacity of the existing database system, and must use an adequate system to manage it with the latest tools and big data specifications because big data itself has a considerable volume. Large so that traditional or manual systems will be challenging to process.

Every day at least 2.5 trillion bytes of data are generated, so the stored data is only accommodated for 2 years; this data is obtained from various sources whose contents are sensors to inform climate, posts in the form of images, videos from various social media sites used, and much more. This is why the data is said to be Big Data.

BD technology is limited to organizational retention and acquisition of skilled people and facilitates the process of making or determining a decision for all employees, not just for decisions. For experts in the company. In other words, training and education activities are needed as a successful method of BD investment.

In addition, using BD technology is also used as a learning improvement process for the organization; in this case, this technology can train employees to increase broad understanding and use better tools as a guide for daily activities for initiatives that employees can take. to determine decisions from the analysis of the information that has been obtained

There are three initial dimensions in Big Data, namely 3V: Volume, Variety, and Velocity.

a. Volumes

- Enterprises are stacked with ever-expanding data from all kinds of sectors, rapidly accumulating terabytes and even petabytes of information.
- Turning 12 terabytes of Tweets created every day into sentiment-enhancing product analytics.
- Converts 350 billion annual readings to better predict market buying ability.

This characteristic is perhaps the easiest to understand because of the size of the data. The volume also refers to the vast amount of data that organizations are trying to leverage to improve decision-making in many countries. However, the volume of data is also constantly increasing and is unprecedented at this level, so it is impossible to predict the exact amount; data size is approximately smaller, from petabytes to zettabytes.

b. Various

- Researches 5 million transactions made daily to identify potential fraud
- Analyze 500 million detailed call logs daily in real-time to predict customer volatility faster.
- Various types of data and data sources.

Variation is about managing the complexity of several types of data, including structured data, unstructured data, and semi-structured data. Organizations need to integrate and analyze data from a complex array of traditional and non-traditional information sources, from inside and outside the company. With so many sensors, intelligent devices, and social collaboration technologies, data is generated in many forms, including text, web data, tweets, sensor data, audio, video, click streams, log files and more.

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Big Data is any data - structured and unstructured data like text, sensor data, audio, video, click streams, log files, and more. New insights are discovered when analyzing these two types of data together. Monitor 100 live video inputs from surveillance cameras for targeting objectives. Leverage 80% of data development in images, videos, and documents to improve customer satisfaction.

Moving data. The speed at which data is created, processed, and analyzed continuously. Contributing to the higher speeds is the real-time nature of data generation and the need to incorporate streaming data into business processes and decision-making. Speed impacts latency, the time lag between when data is created, data is retrieved, and data is also accessible. Today, data is constantly being generated at an impossible rate for traditional systems to capture, store and analyze. Certain types of data must be analyzed in real-time to be useful for businesses.

BD consists of structured and unstructured data from internal and external sources. Using good analytics, it is possible to integrate disparate data sets and integrate the entire enterprise information system, thereby increasing the usefulness of information for decision-making activities. Furthermore, linking the company's information system with external systems gives the company a comprehensive view of the desired object. Practitioners have emphasized that companies have more data than they realize, and, more importantly, much of this data is more likely to be stored outside than inside traditional enterprise information systems (McGuire and Ladd, 2014).

BD can help associations to create added value in almost all aspects of industrial processes. By leveraging BD analytics, the company intends to leverage practical knowledge into large amounts of data and maximize the industry intelligence squeezed from the data to improve enterprise results.

In different terms, the primary purpose of implementing BD in the company is to build further operational, organizational knowledge and information that can be used to maintain sufficient privileges and increase the company's value. Therefore, the evaluation of the company's organizational knowledge can describe the performance of broad data dissemination. Intellectual capital is generally recognized to contain three key elements: HC, SC, and RC.

An essential goal of BD deployment is to build organizational knowledge that will be used to maintain competitive advantage. In addition, intellectual capital can be considered

organizational knowledge that can help companies improve competitiveness and achieve better performance. Thus, the measurement of intellectual capital (IC) can be used as a substitute for the efficiency of implementing BD in the company. In other words, it is rational to assess a company's IC and then apply its measurement in testing the effect of big data on financial performance and market value, which fixes the research problem.

This paper aims to present an integrated framework that systematically identifies and categorizes the main types of threats and opportunities regarding the use of BD technology through an IC management perspective by linking them to opportunities and capital, which in this case is the adoption of BD technology to the standard dimensions of IC (source). Human resources, structural arrangement, relational). The recommended framework is based on the results of a structured iterator review, with a rigorous approach to conducting fairly in-depth analysis and criticism of the literature on the topics below that have been reviewed.

The literature analysis and the proposed interpretive framework prove that the existence of BD has outlined the relevant opportunities for IC management on the condition that organizations investing in such technologies can face and be appropriately responsible for the challenges involved. Secondly, the literature analyzed confirms that these challenges not significantly different from the many risks and opportunities outlined in previous IC studies.

This BDC increases the magnitude of risks from an accelerated tempo as they arise; with this, we must improve traditional managerial solutions Intellectual the era of capital research in the era of Big Data

From the notion that intangible assets are the primary source of competitive advantage, the value these assets bring to organizations has long been recognized. Many scholars discussing the resource-based theory of enterprise focus on the crucial role knowledge play as a source of unique, sustainable market advantage. IC is a multifaceted and heterogeneous concept that differs from the definitions by scholars to each other. For this study, IC can be defined as "the sum of everything that everyone in a company knows that provides a competitive advantage."

Then IC is composed of "intellectual material, knowledge, experience, intellectual property and information that can be used and incorporated to create value." From the last decade, scientists and practitioners have analyzed IC using different methods, developed various concepts and tools to measure, manage, and describe IC.

Currently, scholars are moving towards the so-called fourth stage of IC research, adopting a more performative method approach to understand IC "within" in a nutshell, academics seek to understand "how IC works in organizations, how it represents itself, and how people, processes and relationships are mobilized concerning it taking place.

Thus, the broader concept of IC is recognized, and the focus of research shifts from within the organization. Indeed, the concept of creating value extends beyond the monetary value and wealth of organizations into the broader society of value Below is the reason why the shift in the focus of the IC. value

1. Problems caused by the organization's ability to manage the consequences of IC value creation
2. Significant increase in computing and ICT and growth in the amount of information available

The emergence of BD coincides with technology that links the boundaries between internal and external knowledge that organizations can utilize for future purposes.

Data can be generated from within the organization or from the broader environment in which the organization is embedded because it can come from all the company's stakeholders, both from internal and external sources. In addition, such data and information have the potential to integrate descriptions of intangible assets with items.

BD is a paradigm that best represents the complexity and turbulence of the so-called knowledge era. This can have a significant role in creating new forms of value and represent a solid basis for competition. Quite early, BD was defined as "high-volume, high-speed, and diverse information assets that demand innovative and less costly forms of information processing than the former for better knowledge and decision-making.

Other rumors relating to the adoption of BD technology is the level of trust in this technology in decision-making, making continuous dependence on technology so that those who use it will refuse to make decisions from existing data even simple data; as a result, the skills possessed by the wearer will not be seen and can even be lost due to relying too much upon existing technology, but the company also must take into account in making BD to be easily understood by many employees to be able to use them correctly about the workings of this technology so that the company can get income of investment returns using BD technology.

The challenge faced is the company's task to ensure that employees and teams create a balanced collaboration and implement and manage BD technology. The determination of a company successfully using this technology lies in the company's ability to collaborate with data scientists who have the skills and abilities to analyze data well and understand business systems and managed data.

In the end, the theory of BD that can provide unlimited benefits to companies finds the risks are suitable for the company, especially for employees. On the other hand, the risks faced by large industrial companies and small industries are very vulnerable to privacy issues and a challenge from using technology. In other words, companies need analysis and solutions to overcome potential limitations and legal risks associated with the use of BD technology. However, companies should reconsider and exercise caution in using this technology to avoid failed re-identification and result in legal sanctions for the country.

Conclusion

This paper aims to present an integrated framework that systematically identifies and categorizes the main types of threats and opportunities regarding utilization of BD technology through IC management perspective by linking it to opportunities and capital, which in this case is the adoption of BD technology to the standard dimensions of IC (human resources, structural arrangement, relational). The recommended framework is based on the results of a structured iterator review, with a rigorous approach to conducting fairly in-depth analysis and criticism of the literature on the topics below that have been reviewed.

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