ANVESAK
ISSN : 0378 – 4568 UGC CARE Group 1 Journal

EXAMINATION OF THE STRATEGIC IMPLICATIONS OF BUSINESS INTELLIGENCE: A COMPREHENSIVE LITERATURE REVIEW

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Abstract
Due to the extensive use of technology in the creation of software, and its routine application across all departments, organizational structures have evolved. Businesses started to recognize the effectiveness of such technologies as they proliferated across all industries, and they now have defined IT department requirements inside their organizations. Business intelligence has become more crucial as a result of the integration of these requirements into entire organizations over time. The notion of business intelligence has been further developed to assist upper management and companies that desire to obtain an advantage over their competitors and mark tactical choices in response to competitors, growing uncertainties, and hazards of the industry. In a nutshell, data distribution and analysis among the organization's departments became crucial as upper management used this information to make strategic decisions. By combining research from diverse fields, the study offers a thorough evaluation of the tactical consequences of business intelligence. Data collection, data analysis, data visualization, and organizational effect are just a few of the many BI-related issues. This paper emphasizes how the strategic implications of BI are varied and cross numerous sectors and organizational roles. It emphasizes the significance of data governance, security, and accuracy in BI systems and the necessity of ongoing monitoring and adaptation in light of changing data sources and technological landscapes.
Keywords:*Bussiness Intelligence (BI); Strategic Management; Data Visualization; Information Technology (IT).*

Introduction

Information Technology (IT)'s business value has been frequently shown over the years (Oh and Pinsonneault, 2007). However, this area of research has a key flaw in that it tends to concentrate on the business significance of general IT concepts instead of the value provided by specific types of information systems. These broad IT studies' main objective has been to document the organizational consequences connected to all the organization's IT resources and capabilities. Additional research in the field of information technology has been done to understand the business value of particular platforms and systems, such as ERP (enterprise resource planning) and electronic commerce (Law and Ngai, 2007). The later research's contribution is based on the frequently overlooked idea that different technologies lead to various value-generating processes. Therefore, it is crucial to comprehend the specific value-generation processes that are at work for each technology (Fink et al., 2017).

Businesses currently face greater competition and market dynamism as a result of internationalization and accelerating technological improvements. Firms must invent both incrementally and dramatically at the same time to stay ahead of the competition (Lin et al., 2013). Businesses are turning more frequently to analytical and business intelligence tools (BI &A) to help them make more effectiveness in decisions and improve value of economy as a result of the expanding amount of informations (Božič, and Dimovski, 2019).

In the fast-paced corporate world of today, BI technologies are crucial for aiding decision-making and boosting organisational performance (Ramakrishnan et al., 2012). The systems in question assist companies in storing, retrieving, and analyzing enormous amounts of operational information, allowing them to improve their strategic and tactical decisions and outperform competitors (Ernest-Jones, 2005).

According to Chen et al. (2012), BI has grown in importance over the past few decades in both the academic and business spheres. According to numerous, decision-makers within the company use BI systems to make effective choices about a wide range of business activities. These systems also

produce genuine commercial benefits (Arefin et al., 2015). At the upper management, it provides information making tactical as well as strategic decisions, while supporting day-to-day operations of staff at lower managerial levels. According to a recent study, employing a BI system can help businesses perform better by giving senior decision-makers the knowledge they need to take better action (Cui et al., 2007).

Despite the fact that organizations have been using data to influence their choices since the beginning of the 1900s, the huge amount of data available today has prompted the development of advanced analytics capabilities (Tedlow, 2001). These methods employ techniques like data mining to look for trends that are hidden from standard BI tools. Although the terms "business intelligence" and "analytics" have recently become more popular standard aggregated data is frequently provided by BI systems, whilst unprocessed information is typically used by statistical methods in BA(Chen et al., 2012).

Furthermore, it has been asserted that the administrative requirements for statistical information differ from those for information that is more commercial in nature. Due to the contrasts between these two analytical approaches, it is possible that BA practices may not always be accompanied by BI systems that capture and convert transactional information (Stroh et al., 2011).

One of the biggest issues facing businesses as they make their move from the economy of manufacturing to an information and knowledge-based economy is how to increase the output of knowledgeable employees (Drucker, 1999). Knowing the market is essential for business throughout this transformation. The majority of "business intelligence (BI)" attempts, however, have fallen short of resolving this issue and have instead led to information management-related solutions (Lee and Kim, 2001). In order to improve corporate performance, organizations have also been unable to fully exploit implemented BI and other knowledge management tools (Lee et al., 2005).

Businesses can make smart decisions and get a competitive edge in their industry by using the right business intelligence methodology (Li et al., 2008). According to Maune (2014), business intelligence and competitiveness are closely related. Studies on business intelligence frequently tend yet it's also crucial to take into account its additional beneficial effects on organization. Organizations can create and maintain strategic capabilities with the aid of business information. value in the context of strategic leadership for organizations. It is made feasible by sharing a shared vision. organizational cooperation fosters participation in planning for a company's objectives, or strategy, which is essential to achieving the long-range objectives of an organization. In the context of strategic management, the most crucial component is to increase the company's longevity, growth, and effectiveness both inside and outside the long-term and in the sector. These characteristics of benefit and profit orientation help to support the company operating in the industry (Adiguzel, 2020). When an organization's top management sets priorities, it is crucial to create management assessments and strategies to identify what would be beneficial to the organisation and how that will affect performance. The idea of business evaluation and vision is, thus, at the core of the approach (Orndorff, 2002). The organization's negative effects from failing to prepare business analysis will also be mentioned.

Model of Strategic Management

The idea of intelligence for business first surfaced in France in the 1980s, and it was intended to increase businesses' information technology literacy in order to track competitors, enliven strategic thought processes, and offer quicker and easier making choices mechanisms. While the literature on commerce and other sciences in the military is where the idea of strategy first emerged. Defence strategy is the science of planning and overseeing an army's operations and activities during a conflict, aims to use the available resources as efficiently and economically as possible in order to win the battle (Ülgen and Mirze, 2010). The definition of strategy is "the path to achieve the set goals," and it also denotes "directing, recommending, transferring, instructing, channelling" (Adiguzel, 2020).

In the years between 1900 and 1930, simple corporate activity planning marked the beginning of the evolution of strategic management. Planning and standard operating procedures, as well as functional

norms and policies, were considered in a broader context between the period from 1930 and 1950, when enterprises were to be viewed as a full structure. Creating and carrying out plans for the following several years was the most significant issue facing firms in the 1950s and 1960s. In the year of 1960 and later, Sales estimates for durations greater than a year, as well as an analysis of marketplaces and products, are all part of long-term planning, which was carried out based on previous results.Additionally, the concept of plan of action, which has already been used as a martial concept for millennia, was brought to business texts through strategic planning. The idea of strategic management started to take shape soon after the planning and preparation phase (Üzün, 2000), and it has been applied to companies and leadership since the latter part of the 20th century.

All of the elements required to ensure a company's long-term existence in a cutthroat market are part of strategic management. According to Dobson et al., (2009), a company's strategy describes how it creates considerable value for its consumers, who are its primary source of income. The most general description given to strategic implication is which refers to the process by which an organization establishes its aims and objectives and uses its resources to carry them out. In actuality, the use of strategic management is execution of supervisory choices and actions that establish an organization's long-term effectiveness. Environmental monitoring, long-term or strategic thinking, strategy tool evaluation and control, and strategical design are some of these activities. In order to identify the strengths and weaknesses of an organization, strategic planning focuses on evaluating and tracking possibilities and dangers in the business environment (Adiguzel, 2020).

It is crucial to offer proper 'business data' training to the staff in order to boost productivity in terms of both organizational and strategic performance. Employees have a direct impact on the performance of the organization since they are vibrant and significant stakeholders in the firm. Employees have an important part in helping an organization achieve its goals and aims in this regard, according to the theory of managerial strategy (Bakolu, 2010).

Bussiness Intelligence Analysis

Technology has developed because of humanity's insatiable need to seek out better circumstances, as it does in many other spheres of existence. The eagerness of people to access information is the underlying cause of all these events. Modern businesses store data in a variety of places, including operational databases, information warehouses, internet connections, and individual computers. All of this information is used to support businesses in their tactical, strategic, and operational endeavors. Many businesses consider information as a crucial tool to influence investments, achieve management optimization gain an edge, and earn strategic value (Adiguzel, 2020).

Companies must identify market trends, top-selling goods, and the majority of effective dispersal network while comprehending the characteristics of cost-effective customers in order to survive in a competitive climate. Companies understand that in order to achieve strategic objectives, evaluation, reporting, prediction, and even actual time management of data are required. According to Weill and Olson (1989), Information is the foundation of all business operations, and effective production and administration depend on the efficient use of systems of information, which provide current and pertinent support to all users. Additionally, business intelligence systems enable the monitoring and management of corporate processes, enabling informed decision-making.

Besides having access to a well-designed technological infrastructure, a new solution must also have a clear philosophical foundation and precise definitions of what it means for the general public to embrace it. According to Miller et al., (2006), company intellect is the distribution of the accurate data to the appropriate person (resolution maker) at the appropriate moment. That is to say, as they are crucial components in the creation of the organizational structure, the right choice between internal stakeholder organizations and their corresponding degrees of power and accountability is essential to an organization's success.

Gibson et al., (2004), described that business intelligence's function is to isolate and processing data to create information that is valuable and to use that information to support administrative decision-making. The capacity to view business performance using current and integrated data is the biggest advantage of such solutions for decision-makers. The best solution for optimizing all dispersed data and giving a comprehensive view is business intelligence. This technique enables all company

departments to access the same storage for data and save recent information to the same area. This also prevents informational contradictions across the departments. However, recent studies show that a sizable portion of firms have failed to successfully use their business information in the process of making decisions. Every day, more information is obtained, which causes the inter-company competition to grow at the same rate.
At this point, BI can provide a potent, inexpensive, user-friendly, collaborative resource that satisfies needs. Diverse and completely integrated sources of information are essential for an effective approach to making decisions (Reinschmidt and Francoise, 2000).

Business/Enterprise Intelligence
Business Intelligence as a broad concept that comprises a range of activities, technologies, and methodologies employed by organizations to gather, examine, and convert data into meaningful insights that facilitate well-informed decision-making. The process is the methodical collection and examination of data from diverse sources in order to enhance comprehension of business processes, detect patterns, and facilitate decision-making based on empirical evidence. Wanda and Stian (2015), stated thatbusiness intelligence solutions facilitate the integration of enterprises with other information systems, allowing them to acquire information from a centralized source while analyzing the strategies employed by organizations.

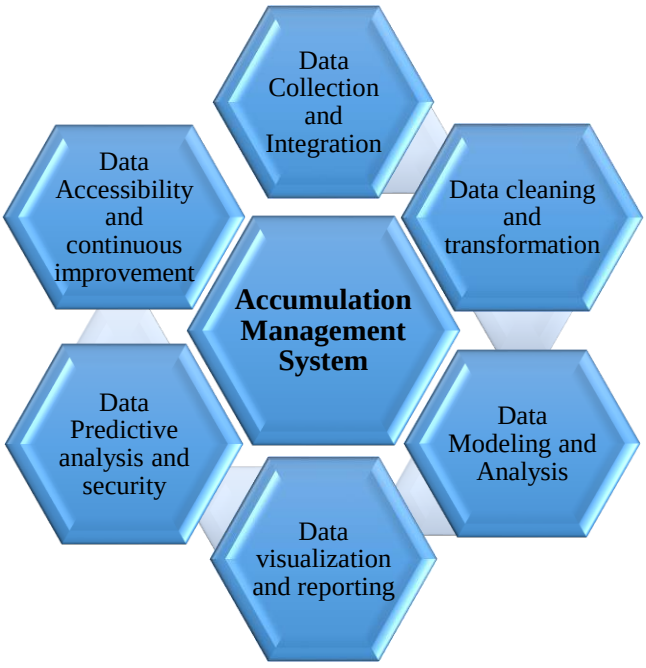

Fig. 1: Major steps in the implementation of business intelligence solutions.
Business intelligence systems offer solutions that are derived from operational data, enabling the ability to draw logical inferences about future outcomes, generate predictions, and generate reports through the analysis and comprehension of present data. In order to facilitate the provision of business intelligence solutions, it is imperative for organizations to possess data that can be analyzed and applied. The maturity level of the Aggregation System of Management and the stages of applications for business intelligence can be succinctly summarized as follows:
In order to achieve strategic success, it is imperative for the upper echelons of an organization's management to possess the ability to effectively utilize and evaluate data. Therefore, contemporary business intelligence applications encompass definitions of artificial intelligence as well. The primary objective is to facilitate the integration of diverse systems and develop comprehensive Information Management Systems. The initial stage involves gathering data from various sources and consolidating it inside a central repository, followed by the process of analyzing and interpreting the data to facilitate informed decision-making. Currently, there exist two distinct methodologies. Expert systems are computer systems that incorporate rules established by humans or artificial intelligence systems capable of autonomously generating rules. To effectively build artificial

intelligence systems, it is vital for the organization to possess a high level of advancement, ensuring the availability of precise and substantial volumes of data. Currently, organizations continue to exhibit a preference for collaborating with expert systems. Regrettably, this error has the potential to compel organizations to discontinue their operations in the market or face significant challenges (Adiguzel, 2020).

For instance, globally renowned corporations like Panasonic, Nokia, and Sony exhibited a delayed comprehension of the business intelligence notion, thereby necessitating them to learn from their competitors due to their erroneous strategic decisions. The incorporation of practical business intelligence solutions into the company's business analytics platform has become imperative. In addition to this, the process of reaching a wide range of individuals necessitates the utilization of data visualization techniques to effectively cater to users at various levels of expertise. The assessment of business intelligence utilization should be conducted in order to ascertain the extent to which intelligence has been made accessible within the organizational context of the computerized environment. The absence of this measurement undermines the credibility of asserting an increase in corporate intelligence. The act of consolidating information may be perceived as a transient surplus of intellect; yet, this impression might be false. Social researchers are interested in the creation and assessment of BI, which extends beyond the statistical technology field. The topic at hand is considered to be among the most prominent topics of research in contemporary times (Nonaka et al., 2006). In essence, Business Intelligence (BI) plays a pivotal role in contemporary enterprises by facilitating the utilization of data to inform decision-making, streamline operations, enhance overall efficiency, and attain a competitive advantage within their respective sectors. The utilization of data empowers firms to efficiently pursue their goals and adapt to dynamic market conditions.

Speed of strategic decisions and organizational layout

Making decisions quickly is one way to describe how quickly strategic decisions are made. The simultaneous participation of numerous factors leads to the formulation of strategic decisions and the steps that follow. Currently, information is one of the most crucial components of making quick strategic decisions, yet knowledge evaluation and knowledge storage are not new concepts. People were aware of the need to gather data even in prehistoric times and kept archives for this reason. Through training, the information center aids in data management and addressing (Biere, 2003). One may say that these were chosen.The concept of intelligence for business evolved in the 1990s as a response to this demand. BIstructures are described to as "Data-oriented decision support systems" by Power (2007). Decision support system development has traditionally been viewed as ending with the creation of the business intelligence application software. As a result, its use is more extensive than that of decision support systems. The most crucial aspect of its utilization nowadays is its robust visual tool support, which also offers greater analytical and prediction algorithm capabilities.

Each strategy is carried out within an organization, and the relationship between structure and strategy within the company is quite strong. As the organization is set up in compliance with the strategies, the structure often follows the strategy. According to the chosen strategy, the organizational framework, the level of decentralization, and the authority and duties of the executives should be set up. Structures that are inadequate for implementing the plan result in internal conflicts within the organization, higher expenses, and decreased efficiency (Dinçer, 1998). Wheelen et al., (2017) has also stated that employees should be convinced to embrace the plans and changes in order to achieve strategic management, and they should not be viewed as mechanical devices. Implementing strategic planning activities in the organization, it could be required to establish strategic management groups (Söyler, 2007). According to studies on enhancing organizational performance (Sabherwal& Chan, 2001), an organization's information technology strategies must be in line with its organizational strategy. Additionally, the upper level of organizational management must effectively administer business intelligence to examine key strategic contextual components, like corporate capabilities and a competitive orientation, and to verify their effect on organizational performance. In the year of 2016, Daneshvar and Palviastates that making investments in IT has an advantageous effect on intelligence for business and

organizational effectiveness cannot improve corporate performance if it only addresses the functionality and technological issues. This is based on an additional analysis of a US public survey. The value of strategic management should also be emphasized, and planning and business intelligence should work in harmony to improve organizational performance.

Conclusion

A technique called strategic planning ensures a strong engagement with the environment, efficiently uses assets and seeks to define the goals of the organization, and executes and regulates activities to provide long-term viability for the company in order to outperform rivals. This cycle never stops since the organization faces both new risks and possibilities as a result of the constantly changing environment. Field studies are required to determine the best ways to apply strategic management as well as business intelligence within organizations, including the stages that should be followed. These studies are needed for organizations in various industries and sectors. Future decisions in strategic management shouldn't be made fully intuitively or while blindfolded. Instead, it's critical to develop future projections based on thorough investigation and by applying analytical and scientific approaches. Business intelligence must be used by organizations that comply with an organizational plan, at all of its layers.

In accordance with organizational requirements, data from many sources is saved using a data model provided by BI services in a single, integrated data center. This creates a single vocabulary among all stakeholders and serves as a foundation for data singularity. In the modern world, businesses that can access information quickly and employ qualified personnel will excel across all platforms. Business intelligence technologies have a significant impact on the creation of organizational plans and strategic decision-making because they store data in an organized manner and enable user-friendly techniques for accessing information. All of the favorable remarks made about business intelligence technologies in recent years are supported by significant expenditures made by organizations. In order to develop their company identity from a sustainable management perspective, firms should integrate information analysis and tactical leadership practices into their organizational culture.

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