

# A Systematic Review of Literature on Intellectual Capital in the Gulf Cooperation Countries

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One of the current topical issues in the Gulf countries is the diversification of the economy and transformation to a knowledge-based economy. Therefore, this study investigates the current state of academic research on intellectual capital (IC). The articles reviewed are mainly those that have used a sample of companies in the Gulf countries. Based on the review, it is found that most of the topics discussed are on the relationships between IC and company performance and company value. However, scant attention has been devoted to factors affecting IC efficiency. In addition, several studies on IC, company performance and company value have used the static model to examine these relationships, thereby neglecting the dynamic relationship that may exist. Hence, this study suggests that in future, researchers should investigate these relationships using the aid of the dynamic model. Further, a longitudinal study may provide a clearer picture on how IC affects company performance and company value over time and the factors that contribute to IC efficiency. This is needed because presently, most of the studies have used a repetitive sample. In addition, the inclusion of members of the royal family on the board of directors may play an influential role in IC efficiency and as a moderator in the relationships between IC and company performance and company value. Such future studies can highlight more information on the state of IC in the Gulf region.

**Key words:** *Intellectual capital efficiency, GCC, Royal family, ROA, Saudi Arabia.*

## Introduction

In recent times, concern for a knowledge-based economy has been growing and intellectual capital (IC) is recognised as the most important contributor to fostering a knowledge-based economy. IC refers to the wealth of ideas and abilities of a company to innovate. It comprises all intangible assets, such as structural, human and relational capital, that relate to knowledge, with the potential to create value that is rare, imitable and non-substitutable (Chen, Cheng, & Hwang, 2005; Ferenhof, Durst, Bialecki, & Selig, 2015). It is a source of creating economic value and competitive advantage, and attaining and sustaining superior performance (Nawaz & Haniffa, 2017; Mondal & Ghosh, 2012; Reed, Lubatkin, & Srinivasan, 2006). Several studies have acknowledged that IC is a yardstick of a company's profitability and revenue growth, and ensuring sustainable competitive advantage (Al-Musali & Ismail, 2016; Chen et al., 2005; Inkinen, 2015). Thus, it can be argued that IC is an important measurement of managers' performance and can be frequently associated as a crucial component to achieve the company's goals (Hamdan, Buallay, & Alareeni, 2017).

Considering the importance of IC, it is crucial for companies to acknowledge, develop, utilize and manage their IC efficiently to be able to achieve superior performance and long-term competitive advantage. Studies have examined the factors that can lead to efficient utilization of a company's IC and among the factors documented, are effective corporate governance mechanisms and audit committee effectiveness (Al-Musalli & Ismail, 2012, 2015; Buallay, 2018; Buallay & Hamdan, 2019). However, empirical evidence on this aspect remains controversial. For instance, Al-Musalli and Ismail (2012) found a significant and negative impact of board independence; and Al-Musalli and Ismail (2015) documented a non-significant impact of board diversity in terms of education and nationality. Other findings on the impact of board size are inconsistent. This inconsistency may suggest that the directors on the boards of companies in the Gulf Cooperation Countries GCC countries may play a vital role in ensuring that IC is efficiently managed because these are mostly monarchy countries. A typical consideration is the impact of members of the royal family on the board of directors. The royal family members can influence strategic decisions and board communication, which can lead to efficient use of the company's IC. AL Nasser (2019), for instance, documented that companies with a higher number of royal family members on the board of directors perform better. Similarly, companies with many independent royal family members on the board of directors have been associated with better performance and higher market value. Therefore, there is a need for research on IC efficiency to find out what role royal family members could play in the board of directors of companies to enhance IC efficiency.

Besides the factors affecting the effective utilization of IC, the impact of IC efficiency on various corporate outcomes has been examined. However, most findings have consistently

revealed that there are differences between accounting and market-based measures with regards to the relationship between IC and company performance. Hamdan (2018) attributed the differences to information asymmetry that exists between the company's decision-makers and investors, who are not privy to some information about the company's activities and future plans. Therefore, the author suggests that if the information asymmetry can be mitigated, the relationship between IC and corporate outcomes would be better known. Based on this argument, some studies have tested the role of moderators in this relationship. Examples of moderating variables that have been examined are company size and corporate governance index. However, little attention has been paid to the moderating role of royal family members on the board of directors in the relationship between IC and corporate outcomes. Moreover, most countries in the GCC are monarchical countries; if royal family members are present on boards, it may mitigate the information asymmetry because they have access to governmental resources and may look for reputational norms (AL Nasser, 2019).

Another concern is that virtually all research conducted to determine the relationship between IC and corporate outcomes as well as the determinants of IC efficiency have been based on the static model. However, the static model may not be able to address reverse causality and endogeneity that are associated with studies on the performance-corporate governance relationship. Therefore, this study suggests that there is a need to shift from the prior methodological approaches to a more sophisticated approach by using the dynamic model. The dynamic model would enable future studies to examine the direct, indirect, and endogenous effects. The dynamic issue arises because current performance can be influenced by prior performance. It also accounts for a reverse causality from performance to IC. For instance, Babajee, Seetana, and Nunkoo (2020) suggested that a high return on assets ROA could have a motivational impact on managers, who may in turn, encourage their staff to perform better. The higher the ROA, the better the company's ability to spend on training as well as research and development activities, which can be value-enhancing for the company. Therefore, a better understanding of the IC and corporate outcomes relationship can be established through the dynamic model. This can be achieved using the Generalized Method of Moment (GMM) or the Panel Vector Autoregressive (PVAR) approaches (Babajee, Seetana, & Nunkoo, 2020; Kehelwalatenna, 2016; Tran, Van, & Vo, 2020). The remainder of the paper is structured as follows. Section 2 discusses the literature review and Section 3 presents the concluding remarks.

## **Literature review**

### ***Definition and Measurement of Intellectual Capital***

The resource-based view theory developed by Wernerfelt (1984) suggests that strategic assets of a company, which are assets used by the company to gain competitive advantage, could

influence company performance. The magnitude and the nature of these assets mainly contribute to company profitability (Amit & Schoemaker, 1993). These assets could be in the form of tangible and intangible assets, the benefits of which are expected to have a significantly positive impact on company performance (Canibono, Garcia-Ayuso, & Sanchez, 2000). While tangible assets (e.g., property plant and equipment and physical technologies) are those assets that are easily imitable and substitutable in case of wear and tear, the intangible assets are valuable assets that are inimitable, non-substitutable and capable of providing a company a competitive advantage and superior financial performance (Barney, 1991). Although most intangible assets do not qualify as strategic assets, intangible assets possess all characteristics of strategic assets (Godfrey & Hill, 1995). Therefore, IC is considered as a vital strategic asset that is difficult to imitate and substitute (Reed, Lubatkin, & Srinivasan, 2006). IC is a major player in corporate development and national growth (Al-Musali & Ismail, 2015; Chen, Cheng, & Hwang, 2005), and a lifeblood of high technology and knowledge-based industries, such as banks, hotels, and pharmaceutical companies, among others (Buallay, 2019). It involves the specific and valuable knowledge a company possesses in terms of tangible and intangible assets (Mehralian, Rajabzadeh, Sadeh, & Rasekh, 2012), which is the fourth factor of production after land, labour and capital (Komnenic & Pokrajcic, 2012).

Prior scholars have defined IC in different ways. For instance, Edvinsson and Sullivan (1996) defined it as knowledge that can be converted into value. Stewart (1997) considered it as intellectual material that is formalized, captured, and leveraged to create wealth by producing a more valuable asset. Such intellectual material involves the collection of knowledge, information, and intellectual property rights that a company possesses. Another definition provided by Edvinsson and Malone (1997) is that IC comprises knowledge, experience, technology, customer relationships, and professional skills possessed by a company that would lead to competitive advantage. This means that IC can be regarded as intangible assets and resources (e.g., knowledge, experience, brands, system, and human resources) that support the creation of company value and enhance the growth and performance of the company. By implication, IC is a combination of all non-physical assets and resources (Mondal & Ghosh, 2012).

Other notable scholars have provided a more classified and simple definition of IC by streamlining it into three unified elements: 1) human capital; 2) structural capital; and 3) customer or relational capital (Bontis, Keow, & Richardson, 2000; Curado & Bontis, 2007; Riahi-Belkaoui, 2003). Human capital (e.g., motivation, interpersonal skills, knowledge, other skills, and attitude) is considered as the most important asset employed to execute the other types of capital (Ferenhof et al., 2015). It includes the knowledge and efficiency that employees take with them when they leave the company (Mondal & Ghosh, 2012). Therefore, human capital recognizes employees as valuable resources that deserve special

recognition in a company (Pulic, 2004). In fact, in a knowledge-based society driven by technological, scientific, and economic revolution, employees are viewed as capable of transforming knowledge into goods and services that can enhance the value of the company (Babajee, Seetana, & Nunkoo, 2020; Bontis, 2004). Structural capital is the “stuff” that keeps the company running and remain a going concern. Structural capital comprises both tangible and intangible assets; such type of capital includes innovation capital, process capital, technological capital, and organizational capital (Ferenhof et al., 2015; Marr, 2005). Structural capital is part of the intangible assets that stays within the company at the end of the working day (Mondal & Ghosh, 2012). Relational capital is responsible for the company’s relationship with the customers, suppliers, and other important stakeholders of the company (Ferenhof et al., 2015). Thus, relational capital is the knowledge that is embedded in the relationships with all stakeholders that affects the company (Mondal & Ghosh, 2012). All these components of IC are significant determinants of long-term success of a company and managers and stakeholders lay emphasis on each component differently (Al-Musali & Ismail, 2016).

Despite the classification of IC, Pulic (2004) suggested that IC should not be treated as a cost, but as an investment, because the knowledge of workers and their productivity have to be considered when measuring the IC of a company. On this note, Pulic developed the value-creation efficiency of IC, with the inclusion of value-added advantage, that may indicate that the value of the company is being destroyed, while revenue, profit, and gross domestic product GDP may indicate successful performance. Based on this suggestion, the Pulic method became a widely used method for measuring the IC of a company by academics and stakeholders non-academic scholars, and it is considered as an important tool that can be used by decision-makers in a knowledge-based economy to integrate IC into the decision-making process. The Pulic method, or also known as value intellectual capital coefficient (VAIC), is an analytical process developed to enable stakeholders (e.g., managers and shareholders) to effectively control and evaluate the efficiency of the value added by a company’s total capital and resources and by each major component of the capital and resources (Firer & Williams, 2003).

### ***Determinants Of Intellectual Capital Efficiency***

Corporate governance mechanisms are vital instruments responsible for creating, developing, and leveraging the IC possessed by individuals and companies, which can lead to the efficient use of IC in order to create value. Scholars have examined the importance of effective corporate governance mechanisms in IC efficiency. For example, Al-Musalli and Ismail (2012) used a sample of 147 banks in the GCC countries over the period of 2008 to 2010 to examine whether or not the board of directors’ characteristics affect IC performance. They

found that the proportion of independent directors has a significantly negative impact on IC performance.

Another study by Al-Musali and Ismail (2015), using a sample of 128 banks in the GCC countries over the period of 2008 to 2010, examined the impact of board diversity (education and nationality) on IC performance. They found that board diversity has no significant influence on IC performance. Therefore, they concluded that the results fail to support the resource dependence and upper echelon theories. Buallay (2018) also showed that board size is significantly and positively associated with modified VAIC (MVAIC). However, in terms of the components of IC efficiency, board size has a significant impact only on human capital efficiency (HCE) and structural capital efficiency (SCE). In contrast, Al-Musali and Ismail (2015) reported that board size is insignificantly associated with IC efficiency, measured by VAIC.

Buallay and Hamdan (2019) used a sample of 171 Saudi Arabian companies over the period of 2012 to 2014 to examine the association between corporate governance mechanisms and IC efficiency. The corporate governance variables considered were board size, board independence, CEO duality, and ownership of the three largest shareholders. They found that corporate governance has a positive influence on HCE and SCE, which means that companies with a higher level of corporate governance principles (e.g., higher proportion of independent directors, board size, ownership concentration and the separation of CEO and chairman's role) tend to have higher HCE and SCE. However, CEE is higher for companies with lower corporate governance principles. Buallay, Hamdan, Zureigat, and Al-Hayale (2019) used a sample of 171 Saudi Arabian listed companies between 2012 and 2014 to investigate the association between independent directors and IC efficiency. The results show that board of directors' independence has a positive influence on CEE and SCE.

The role of audit committee characteristics (independence, number of meetings, financial expertise, and size) has also been considered. Buallay (2018) used a sample of 59 banks over the period of 2011 to 2015 to investigate the role of audit committee characteristics on IC efficiency. The results show that audit committee effectiveness, in terms of financial expertise and independence, has a significantly positive impact on MVAIC. However, audit committee size and meetings are insignificant. In addition, detailed analysis shows that audit committee financial expertise and independence are significantly and positively associated with various components of IC efficiency. However, audit meeting frequency is found to be significant in HCE, SCE and RCE, while audit committee size is only significant in CEE.

In terms of voluntary disclosure of IC by companies, Buallay, Hamdan, Zureigat, and Dhaen (2019) used a sample of Bahrain companies over the period of 2011 to 2015 to examine the relationship between voluntary disclosure and IC efficiency. They found that bigger and older

companies disclose more IC information in the annual report than smaller and younger companies do. In addition, companies that disclose more voluntary information have high IC efficiency. In another related study, Buallay and Hamdan (2019) used a sample of 30 Bahrain companies between the period of 2011 and 2015 to examine the effect of IC disclosure on IC efficiency. The results show that IC disclosure has a significantly negative effect on CEE, but insignificant effect on HCE and SCE.

### ***Intellectual Capital and Company Performance***

#### ***Studies on Financial and Non-Financial Companies in the Gulf Cooperation Countries***

Several studies have investigated the impact of IC on performance using the VAIC and MVAIC models. However, most of the studies have used different performance measurements, in terms of accounting and market-based performance. The accounting-based measures are return on assets (ROA), which is a measure of a company's operational performance; return of equity (ROE), which is a measure of a company's financial performance attributable to the shareholders; and asset turnover (ATO), which is a measure of a company's productivity. The market-based performance is measured through Tobin's Q, which is a measure of a company's value. Among the performance measures, the productivity measure has received less attention in prior studies. In addition, the VAIC and the MVAIC models have mainly been examined in the financial sector; studies which have investigated the non-financial sector or a combination of both sectors, have only focused on the components of the VAIC in relation to corporate outcomes without the investigation of the VAIC as a single variable.

For instance, Dzenopoljac, Yaacoub, Elkanj, and Bontis (2017) used a sample of 100 companies ranked as top performers, in terms of sales, profits, assets, and market value by Forbes Middle East, to examine the impact of IC on Arab companies' performance over the period of 2011 to 2015. They found that SCE and CEE significantly impact earnings and profitability. However, market performance is influenced by HCE, while efficiency is influenced by CEE. A more comprehensive study by Hamdan (2018) that used 198 companies from two Gulf countries (Bahrain (27) and Saudi Arabia (171)) over the period of 2014-2016, has found that the VAIC has a significant and positive impact on ROA, but is insignificant with Tobin's Q. The results indicate that the impact of IC efficiency is felt more on companies' profitability, but not market value. Further results show that IC performance varies according to different components of IC. Specifically, Bahrain and Saudi Arabian companies with high levels HCE have high ROA, but low Tobin's Q, which means that investment used in developing employees' skills only increases companies' operational performance. In addition, Saudi companies with high levels of SCE have high Tobin's Q, but low ROA. In the case of Bahrain, companies with high SCE have high ROA, but low Tobin's

Q. Further results indicate that Saudi Arabian companies with high levels of CEE have high ROA and Tobin's Q.

With a sample of 171 Saudi Arabian companies between 2012 and 2014, Hamdan, Buallay, and Alareeni (2017) found that HCE has a significantly positive influence on Tobin's Q, but insignificant influence on ROA and ROE. This contradicts Hamdan's (2018) findings that HCE has a significant influence on ROA, but no influence on Tobin's Q. Therefore, one can argue that companies in Saudi Arabia do not benefit from human capital. The authors claimed that this could be due to the fact that most Saudis do not accept unskilled or menial jobs, and offer such jobs to foreigners. Consistent with Hamdan (2018), SCE is found to be positively associated with ROE and Tobin's Q, while CEE has a significantly positive influence on ROA. The overall implication of the results is that HCE, SCE and CEE are all significantly associated with Tobin's Q. However, another study by Buallay (2017) that used a sample of 171 Saudi Arabian companies over the period of 2012 to 2014 to investigate the impact of IC on company performance, has found that VAIC has an insignificant impact on both ROA and ROE. However, when VAIC is decentralized, HCE is significantly associated with ROE, but SCE is negatively associated with ROE. In addition, a significant influence is found between CEE and Tobin's Q.

### ***Studies on Financial Institutions***

An argument has been put forth that strategically, banks are knowledge-intensive companies that require the efficient utilization of IC because most of their activities are of an intellectual nature, which requires knowledgeable and skilled human resources. Prior studies have examined the impact of IC and found that it plays a value-enhancing role in the banking environment (Abdulsalam, Al-Qaheri, & Al-Khayyat, 2011; Al-Musali & Ismail, 2016; Buallay, 2019; Ousama, Hammami, & Abdulkarim, 2019).

For instance, Nawaz and Haniffa (2017) used a sample of 64 Islamic financial institutions operating in 18 different countries over the period of 2007-2011. They found that VAIC has a significant and positive impact on ROA. Similarly, Al-Musali and Ismail (2016) used a sample of banks in the Gulf countries (e.g., Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE) over the period of 2008-2010. They found that VAIC is positively associated with banks' ROA and ROE. With a sample of 37 Islamic banks operating in the Gulf countries (e.g., Bahrain, Qatar, Saudi Arabia and the UAE) over the period of 2011-2013, Ousama, Hammami, and Abdulkarim (2019) showed that VAIC has a significantly positive impact on banks' performance. Another study by Buallay (2019) that used a sample of 59 banks in the Gulf countries over the period of 2012-2016 through a comparative study of conventional and Islamic banks' IC performance, has shown that Islamic banks' MVAIC has a significantly positive influence on ROE and Tobin's Q. However, for conventional banks, MVAIC is only

significantly associated with ROA and ROE. Using the same sample, Buallay, Cummings, and Hamdan (2019) found similar results. Likewise, with a sample of 59 banks over the period of 2012-2016, Buallay, Hamdan, Reyad, Badawi, and Madbouly (2020) found a significantly positive relationship between MVAIC and ROE as well as Tobin's Q.

Other country-specific studies, such as Sulphey and Naushad (2019), that used a sample of Saudi Arabian banks over the period of 2013-2016, have found that VAIC has a significant impact on ROA. However, when Islamic banks were separated, VAIC has a significant impact on both ROA and ROE, indicating that the IC of Islamic banks is used more efficiently to enhance performance. Naushad (2019) also found that VAIC has a significantly positive impact on ROA and ROE for a sample of four Sharia-compliant banks in Saudi Arabia over the period of 2013-2018. A similar positive impact of IC on performance was reported by Abdulsalam, Al-Qaheri, and Al-Khayyat (2011) for a sample of Kuwaiti banks over the period of 1996-2006.

### ***IC Components and Bank Performance***

Although prior studies have indicated that IC has a significant impact on performance, the results on the components of IC vary with bank performance. Ousama, Hammami, and Abdulkarim (2019), and Al-Musali and Ismail (2016), for instance, reported that among the components of VAIC, HCE is the main driver of IC as compared to SCE and CEE. In addition, the financial value of IC is mostly illustrated in ROA over other performance measures.

Al-Musali and Ismail (2016) found that HCE is significantly and positively associated with banks' performance in countries, like Bahrain, Oman and Saudi Arabia, but negative in the UAE and insignificant in Kuwait. The authors suggested that the negative and insignificant results in the UAE and Kuwait could be because of inadequate training provided to employees or investors treat expenditure on human resources as cost with no short-term benefits and react negatively to high employee-related expenditure. In Qatar, a negative association is found between HCE and ROA, but insignificant with ROE. In the case of SCE, a significant and positive association is found in Kuwait, Oman and the UAE. In terms of CEE, a significant and positive association is found with ROE in Kuwait, Oman and the UAE, while for ROA, a significant and positive association is found in Oman, Qatar, Saudi Arabia and the UAE. Further results show that Qatar has the highest VAIC and HCE, followed by the UAE, Saudi Arabia, Oman, Kuwait and Bahrain. However, Bahrain has the highest SCE.

Ousama, Hammami, and Abdulkarim (2019) reported that Islamic banks' HCE, has the highest mean score compared to other components of IC (e.g., CEE and SCE). While HCE

and CEE both have significant and positive impact on ROA and ROE, SCE has no significant impact, which means that Islamic banks are not fully utilizing their IC. Likewise, Nawaz and Haniffa (2017) documented that HCE and CEE have a significant and positive association with ROA, whereas, SCE has no significant impact on ROA, meaning that the value-creation capability of Islamic institutions is more present in HCE and CEE. In a similar vein, Buallay (2019) found that HCE and CEE have a significant influence on ROA and ROE, but in terms of Tobin's Q, HCE and RCE have a significant association. For conventional banks, Buallay (2019) found that HCE and CEE have influence only on ROA, while CEE and SCE influence ROE. Another study by Buallay, Hamdan, Reyad, Badawi, and Madbouly (2020) has reported that HCE and CEE influence ROA and ROE, while HCE and RCE influence Tobin's Q. In addition, SCE and CEE have a significant influence on ROA. Naushad (2019) reported a significantly positive impact of HCE, CEE and SCE on ROA. However, a negative relationship exists between HCE and ROE. Sulphey and Naushad (2019) found that Saudi banks generated value from HCE rather than SCE and CEE. However, HCE and SCE are significantly and positively associated with ROA, while CEE is significantly associated with ROA and ROE. When Islamic banks model were separated, SCE has a significant association with ROA and ROE, whereas, HCE and CEE are associated with ROA only. The implication of this is that infrastructural assets, like the use of IT and financial networking, greatly affect Islamic banks' performance.

### ***Studies That Have Used Moderators***

A few studies have used moderating variables to investigate the IC-performance relationship. For instance, Hamdan, Buallay, and Alareeni (2017) used a corporate governance index, i.e., financial and market performance, to investigate the moderating role of corporate governance in the relationship between IC and performance of Saudi Arabian companies. They found that the corporate governance index positively moderates the relationship between IC and ROA, ROE and Tobin's Q. When IC is broken down into its components, it is found that corporate governance has a moderating influencing on the relationship between HCE, CEE and ROA. However, corporate governance has no moderating influence on SCE and ROA. When ROE is used as a performance measure, corporate governance has no moderating influence on the HCE and ROE relationship, whereas, in the case of CCE and SCE, a positive influence appears. Therefore, they concluded that the moderating influence of corporate governance varies across different components of IC.

In another related study, Al-Musali and Ismail (2015) investigated the moderating role of board meeting effectiveness to examine how board diversity affects IC performance. The results show that board meeting does not have any moderating influence on the board diversity-IC performance relationship, meaning that board meetings do not assist or provide necessary information needed by the board of directors on strategic issues related to IC.

A study by Buallay and Hamdan (2019) used company size as a moderator to investigate the relationship between corporate governance and IC efficiency. They found that company size only positively moderates the relationship between corporate governance variables and CEE. They therefore suggested that the board of directors has not fully realized the potential of other IC components, such as HCE and SCE.

## **Conclusion**

The value of companies today largely depends on the intangible assets rather than physical assets. One intangible asset is the IC possessed by a company, which includes HCE, SCE, RCE and CEE. A common model used in investigating IC efficiency is the Pulic's VAIC and the MVAIC models. Several studies have used these models to examine the significance of IC on company's financial performance and market-value and have found that IC is crucial for a company's success because it impacts the financial and market values of a company. However, the review in this study shows that results are mostly dependant on the performance measures used. Each component of IC has a different relationship with performance measures used. In addition, most of the samples used to carry out the investigation are repetitive and for shorter periods. Therefore, it would be more interesting to have longitudinal studies carried out in each country or for all Gulf countries. Such studies would enable us to have a clearer understanding of IC performance in the Gulf countries. It would also enable managers and stakeholders to have a clearer view and further insights into the value-added advantage of IC in both financial and non-financial companies. In fact, conducting an industry-specific comparison would provide more insights into the relationship.

Furthermore, future studies should devote additional efforts to the use of more sophisticated methodological approaches, like a dynamic model rather than the usual static model to examine the relationship between IC and performance as well as corporate governance and IC efficiency. The dynamic model would enable future studies to be able to address the direct, indirect, and endogenous effects on these relationships, considering all these are important for generalizing the results. It would also be helpful to stakeholders, investors, regulators, and decision-makers regarding the strategic assets that can be employed and optimized to increase a company's financial performance and market value.

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