



Using Management Information Systems (MIS) to Boost Corporate Performance

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Abstract: The study emphasizes the importance of Management information systems (MIS) for corporate performance. Prior studies have been reviewed to substantiate theories that explain how Management information systems (MIS) affect corporate performance. Management information system (MIS) is providing information that relates to possible future events, efficiency and output rates. Furthermore, greater management information system capability leads to a higher degree of strategic performance. These and many other factors are suggested to be critical features of MIS that have a direct impact on financial and strategic performance of companies.

Keywords: Marketing information system, MIS, Corporate performance, Information systems

1. Introduction

Corporate operations and decision-making are widely based on information that has been provided or generated by individual and specific IT systems. Such systems are used to collect, harvest, organize, and generate an output that would back up fast and sound business decision. Firms adopt new management techniques and systems with the purpose of enhancing the decision-making processes, improve results and minimize output costs (Henry and Mayle, 2003; AlMaryani and Sadik, 2012). Consequently, this is a way to enhance company operation effectiveness. Various management techniques and management accounting practices improve financial performance if firms follow specific strategic priorities (Chenhall and Langfield-Smith, 1998; Naranjo-Gil, 2004). It is also suggested by studies that companies using accounting techniques based on traditional management prove to be more profitable than those using NMTs (Chenhall and Langfield-Smith, 1998).

Furthermore, researchers assume that managers, as rational agents, are unlikely to adopt a management information system that does not improve their company's financial performance (Chenhall, 2003). Therefore, management information are used to considerably improve decision-making and, as a result, financial performance. Likewise, firms that rate their management information system high will conceivably adopt it to a much bigger extent, with the ultimate goal of maintaining and improving their overall financial performance. Despite the limitations, some empirical studies attempt to relate financial performance to management IS or new management techniques. The majority of them analyze the individual effect of a particular management method, although with a degree of divergence in results. In many companies, such management information systems have been implemented as a support in decision-making and a tool to attain high corporate performance. Still investigating the relationship between MIS and corporate performance requires further examining.

In this research, we postulate a question whether MIS implementation affects corporate performance and how. To answer these questions, we utilize present theories that enable us to connect MIS concept to corporate performance. We

discuss current studies and use existing methods to elaborate this relationship. The current piece of work follows the approach of the above-mentioned contributions to the prior literature and considers that a management information system is satisfactory when it allows the company to make better decisions and improve its financial performance.

2. Concept of MIS and its benefits

Management information systems are formal systems for presenting management with timely and suitable information necessary for decision making (Leonardi and Bailey, 2008). The system gives information on the past, present and project future and on related developments inside and outside the organization (Baccarini, 1999). It may be described as an integrated and organized system for collecting relevant data, transforming it into correct information and providing the same to the concerned executives. The main purpose of MIS is to “provide the right information to the right people at the right time” (Gray, 2000). The ideas of management information systems were formed to counteract such inefficient development and productive use of the computer. MIS concepts are crucial to efficient computer use in business.

When a system gives information to people who are not part of the managerial staff, then it will not be viewed as part of a Management information system (Belassi and Tukul, 1996). Such a system, while it may contain similar interfaces as MIS, is not a part of it. Examples of such systems are salary acknowledgments and excise duty statements. Generally, MIS deals with information that is systematically and routinely collected in accordance with a well-defined set of rules (Spathis et al., 2007). Furthermore, Management information system is a part of the formal information network in an organization. Information that has great managerial planning importance is seldom obtained at golf courses. However, this information is not part of MIS, but “one-shot market research data accumulated to measure the full potential of a new product does not come within the goal of a Management information system by our definition, seeing as such information which is systematically retained is not collected on a regular basis” (Belassi and Tukul, 1996). Frequently, the information provided by an MIS helps managers in making planning and control decisions (Jorgenson, 1989). Each company or organization, in order to function properly, must be able to execute particular operations, “whether it is a wholesaler or car manufacturer or who has to provide water to its area of jurisdiction” (Wu and Lee, 2007). All these operations need to be accompanied by meticulous planning, meaning the car manufacturer must decide on the type of car and the wholesaler should determine which pumping period to install for the five-year period (Gray, 2000).

Also, a company or organization must control the operations according to the plans and targets developed in the planning process (Jorgenson, 1989). The car manufacturer must make decisions to improve the deviation or revise his plans. On the other hand, similarly, the wholesaler must determine the impacts that his commissions have had on sales and make decisions to fix conflicting trends (Wu and Lee, 2007). Management information systems take care of planning and control (Leonardi and Bailey, 2008). Elaborate systems exist for information that assists operations. The car manufacturer will hold a system for presenting information to the workers on the shop floor concerning the job that needs to be performed on a particular quantity of material. There may be route sheets, which accompany the rate materials and components in their movement through various machines (Lewis, 2004). This system provides only the information to support operation. It has no managerial decision-making significance. It is not part of an MIS. If, however, the system does provide information regarding productivity, rejection rates or machine utilization, meaning that the system is part of a Management information system.

3. Types of MIS

Management information systems provide a competitive advantage when the system supports the goals of the organization (Jorgenson, 1989). Most organizations are structured functionally, and systems are classified as Accounting management information systems, financial management information systems, manufacturing management information systems, Marketing management information systems, Human resources management information systems. When it comes to accounting MIS, all accounting reports are distributed by all accounting managerial levels. The management of the information that at the accounting department is one of the most vital factors in determining the efficiency and the department (Leonardi and Bailey, 2008). The information that gathers included the invoice, account document, payment, draft, banking document, etc. (Wong et al., 2009).

The information is usually arranged and managed by computer system compared to the human power which is written down in black and white. The software and system used for the accounting management were the UBS system, SQL system and other associated systems that can manage the accounting information files (Jorgenson, 1989). The system using the SQL system especially is the most suitable system to maintain and reorder the accounting department information. The information that is gathered mixed or not in order is easily recognized by the system and determine the detail and type it used to be (Spathis et al., 2007).

In the accounting department, the information is an important element that running the operation of the department (Liang et al., 2007). The accounting department is also depending on the information as well as another department that relies on it in the other way around (Baccarini, 1999). It is also vital that the accounting department provides the right and accurate information to the organization and other departments. The prediction and authenticity of the information decide the future of the organization. Another type, the financial management information system presents financial and economic information to all business and financial managers within an organization including the chief financial officer (Leonardi and Bailey, 2008). The chief financial officer analyzes historical and current economic activity, projects future financial needs, and controls and supervises funding using the information developed by MIS department (Wong et al., 2009). The information that has for the financial department will determine the budget and the planning for the organization (Lewis, 2004). In establishing or the development and growth of the company, the collected financial and economic information will define the volume of the organization. The collected information also demonstrates the company's financial situation concerning growth and development. In order to make sure the security of the information of the organization, the information is well kept and in choosing for the ordinate for the financial department, only those who are qualified will be selected (Baccarini, 1999). The information systems cost assessment is a crucial management concern. An estimate aids in determining individual proposals, to schedule their growth, to supervise and control their advancement, and to assess estimators and implementers.

In manufacturing management information systems more than any functional domain, operations have been influenced by notable technological improvements. Manufacturing processes have changed as a result. Inventories are granted in so that considerable amounts of money are not spent for warehousing huge inventories (Liang et al., 2007). In some cases, raw materials are even prepared on railroad cars waiting to be directly sent to the factories, thus eliminating the need for warehousing. The current input subsystem of the companies relies profoundly on information systems in order to function efficiently and productively. Input subsystems ensure raw material, assemblies and subassemblies from various and indirect sources based on the just-in-time (JIT) philosophy (Baccarini, 1999). A marketing management information system maintains managerial activity in the field of product advancement, pricing decisions, promotional efficiency, and sales forecasting. Furthermore, marketing systems rely on external data sources which include customers and competition. The collected information is also important to define various marketing strategies. We classify the role of information systems in a firm in order to analyze the influence of information systems on companies and organizations, also determining the amount of impact modern IT has on the company's cost structure, and examining how these effects result in changes to different properties of the company or organization, from a perspective of agency theory and transaction cost economics (Spathis et al., 2007). Furthermore, information systems are utilized to examine the global business environment and conditions, presenting the organization or company with valuable feedback concerning business possibilities, market, and consumer demographics as well as cultural and political information (Lewis, 2004). This kind of feedback is crucial for forming and completing marketing and business strategies that equal organizational strengths with environmental opportunities. Also, information systems link and coordinate the different operations of the organization globally facilitating overall internal efficiency (Baccarini, 1999). Information systems are crucial for the management of quality assurance systems and the assessment of the environmental influence of alternative packaging materials. Automated warehousing and distribution world, of course, be impossible without significant investments in information systems (Hjelt and Bjök, 2007).

Finally, according to Gray (2000), *human resources management information systems* are occupied with activities related to all managerial levels, workers, and other individuals employed by the company. Because the personnel function refers to all other business areas, the human resources management information system represents an invaluable part in guaranteeing organizational success (Spathis et al., 2007). Activities performed by the human resources management information systems include workforce analysis and planning, hiring, training, and job assignments (Hjelt and Bjök, 2007).

4. Management information system and overall firm performance

The success of the management information systems can be achieved by analyzing its effect on results. Various authors consent with this concept and directly affirm that the goal of management information systems should be to obtain an improvement and enhancement in the firm's financial performance. For instance, authors say that management information systems should aid companies in taking more appropriate decisions or improving their comprehensive financial performance (Dopuch, 1993); the objective of management information systems is to enhance overall financial performance, not to obtain more precise costs (Cooper and Kaplan, 1992); firms utilize innovation to obtain advantages that indirectly or directly impact economic performance indicators (Cagwin and Bouwman, 2002); or the primary objective of management information systems is to improve and enhance the potential role of the system in improving the firm's overall financial performance (Ranganathan and Kannabiran, 2004). Taken together, these findings, along with the conceptual model, have significant research and managerial implications.

Moreover, according to a study conducted by (Naranjo-Gil 2009), Management information system has an influence on flexibility-based strategic performance and cost-based strategic performance, taking into account the decentralization of responsibilities, updating customer knowledge and customer participation in management, the cooperation with other units with the scope of increasing the firm budget, and actualization and use of management information (Slotegraaf and Pauwels, 2008). According to their research combined with prior knowledge on management information systems, a study was made how different team compositions interact with a management information system, directly influencing strategic performances, focused on flexibility and the reduction of costs. The results exhibit how the effect of management information system on strategic performance is supervised and governed by top management team diversity. The extent to which the management information system is providing information that relates to possible future events, efficiency, output rates, information on the effect of various events, that also relate to the impact that the employees decision has on the performance of other departments. (Naranjo-Gil, 2009). Furthermore, greater management information system capability leads to a higher degree of strategic performance.

In a research conducted by Kirsch (1997), it is suggested that there is a direct link between behavior control, outcome control, clan control, self-control with firm performance, and with the moderating effect of the complexity risk. Kirsch (1997) tried to determine whether the user anticipated the development team to follow an intelligible written series of steps toward the attainment of project goals or if the user presumed the development team to follow explained written system development rules. Furthermore, based on the data obtained from previous research on management information systems projects, behavior, outcome, and self-control are determined to be undoubtedly linked with the system performance of projects. However, complexity risk generates a mixed moderating effect on the relationship between control and performance. The research model tried to determine if, in the presence of a high complexity risk, the impact of behavior and self-control on performance are low, whereas the effectiveness of outcome and clan control increases. Overall, there is an optimistic tone for control as an important causal driver for comprehensive performance.

According to a study conducted by Qrunfleh and Tarafdar (2014), a connection between supply chain (SC) strategy and supply chain information systems (IS) strategy was examined, and its impact on supply chain performance and firm performance. The results also support the proposition that an organization's ability to use supply chain strategy to support its core competencies is dependent on management information systems' functional capabilities.

Prior research by Maiga and Jacobs (2003), the interface between management control and information technology is an underdeveloped research area with a knowledge gap concerning its implications for financial performance. The present research model analyzes the interaction effect of cost control systems and information technology integration on company financial performance. The conducted research showed that while information technology integration and cost control systems hold no significant influence on plant financial performance, they do associate to positively influence manufacturing plant financial performance. According to Ragu et al. (2004) their conceptual model emphasizes the link between top management support and information system performance, and Top management support proved to be a significant factor in determining the efficiency of the information system function in an organization and the direct and indirect relations described in the model between top management support and IS performance were supported by the results (Wernerfelt, 1998). The variables that had a moderating effect on this relationship comprehended the structure of the information system, integration of the information system, current and future portfolios of the information systems and the different modes of information system management controls.

According to the research conducted by Lai et al. (2004) a link was established between sharing environmental management information with customers and suppliers and the overall comprehensive firm performance, which included environmental, cost and profit performance and the mediation effect of environmental munificence (Slotegraaf and Pauwels, 2008). The previous study highlighted the importance of information exchange with supply chain partners for achieving performance gains. Environmental management information contributes more to the long-term than to the short-term influences on overall firm performance, enhancing the comprehensive operational effectiveness. also a study conducted by Huang et al. (1998) hypothesized that information technology has an influence on overall environmental performance, taking into account the firm size and age, and also the ownership structure. The model proposes that information technology also presents opportunities for firms to greening IT and/or increasing their efficiency of resource use. Information technology is viewed as a solution possibility for environmental management and sustainability by analyzing how IT influences environmental performance. The variables: IT technical infrastructure flexibility, personnel skills, business alignment and environmental management integration all have an effect on comprehensive environmental performance (Ryals, 2005). Schewe (1976) proposed a model that analyzed the relationships between management information system users' perceptions of their computer system, observed variables exogenous to the system, attitudes, and system usage. The model included MIS capabilities, user education, atmosphere, MIS refinements, other exogenous variable and attitude components. There was no significant connection found between the system usage behavior and attitudes, which would have a further effect on overall company performance.

MIS enhances the quality of plants by providing appropriate information for quality decision-making. Due to an increase in the size and complexity of organizations, managers have lost personal contact with the scene of operations. MIS also changes the bigger amount of data into compiled form and thereby avoids the possible ambiguity that may arise when managers are swamped with detailed facts. (Ryals, 2005). Decentralization of authority is possible when there is a system for monitoring operations at lower levels. MIS is successfully used for measuring company performance and making a necessary change in the organizational plans and procedures (Pfeffer and Sutton, 2000). MIS links all decision centers in the organization, by facilitating the integration of specialized activities by retaining each department conscious of the requirements and issues of other departments. (Jorgenson, 1989). Management information system serves as a link between managerial planning and control and assembles, processes, stores, retrieves, evaluates and disseminates the information. It improves the capacity of management to analyze, assess and improve comprehensive company performance.

5. Conclusion

Management information system is vital for the development of business, with many benefits that may result from it. These benefits can be obtained from the business owner application of information systems. To be able to keep compete with competitors will require a safe and reliable management information systems. MIS is a concept linked with man, machine, marketing and methods for collecting information from the internal and external source and analyzing this information to facilitate the process of decision-making of the business. Previous research of DeLone and McLean (2003) implied that "the success of information systems will enhance the performance of enterprises." This is the reason numerous companies have invested considerably in information systems as a strategy trying to gain an advantage over competitors. All business crave improved operational efficiency and flexibility. Also, in the long run, a good and most of all operational, functional and efficient management information system should be sustained by electronic data communication network systems that are proven to be stable and reliable. With the use of valid information systems, the company can exchange information more effectively and efficiently (Priem and Butler, 2001). In addition, a way to increase company operations and improve their overall effectiveness, companies adopt new management techniques with the goal of enhancing overall decision-making processes, improve results and finally reduce costs. (Henry, 2001; AlMaryani and Sadik, 2012). Although there are many benefits of integrating information technology in businesses, there are some drawbacks when it comes to MIS (Liang et al., 2007). To install and implement such a system is quite costly for companies, as it usually requires integration with the existing technology. There is also a question of Maintenance of Management information systems. A well-trained workforce who can deal with MIS maintenance is also expensive. Management information systems may also become ineffective (Gray, 2000) as insignificant or non-essential information is supplied which in turn may slow the business decision-making process down. An implementation may also cause the elimination of jobs when people that were performing the tasks MIS performs now become obsolete (Pfeffer and Sutton, 2000). Information technology systems also become vulnerable to security breaches, especially via the Internet (Gray, 2000). Future studies may focus on drawback research as well as

on the empirical study of MIS benefits, which have a huge influence and role on providing efficiency, and effectiveness of strategic decision making and analyzing an organized approach to the study of an organization's management at every level in making operational, tactical, and strategic decisions. By comparing similarities and differences between multiple variances of management information systems, the abovementioned conducted studies and prior research extract several patterns that explain how management information systems play a core role in achieving a high level of agility and competitive performance.

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