

Management Information System for Performance Evaluation of Organization, Based on the Balanced Scorecard Method

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Abstract: The questions are: how and why managers are unresponsive to management information systems and does management information system really affect organization? Management information systems are unified system of users and machines to provide information in support of the operations, management and decision-making in the organization. Balanced Scorecard as a performance measurement system that was proposed by Kaplan and Norton in 1992, by translating the vision and strategy of the organization to understandable expressions prevent different impressions by aligning individual and organizational goals to help the successful implementation of the strategy. The aim of the present study is applied in terms of objective and descriptive-analytic in term of methodology. Given that, library approach was used to investigate the effect of management information systems on the balanced scorecard. The results of the present study suggested that in the present era information management system is more essential than ever for survival of an organization and has many effects on the organization. In addition, very important effects of management information system (economic and structural effects) on the balanced scorecard (financial, customer, internal processes, learning and development) are examined and effects such as lowering the cost, reduction in the time, empowering human resources, flexibility, improvement in decision-making and so on can be noted. A model was proposed that managers could use it for quick profitability and competition in competitive markets that is aimed at any organization.

Index terms: Management information system, economic effects, Structural effects, Balanced Scorecard, Financial, Customers, Internal processes, Learning and development.

I. INTRODUCTION

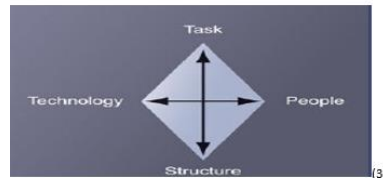
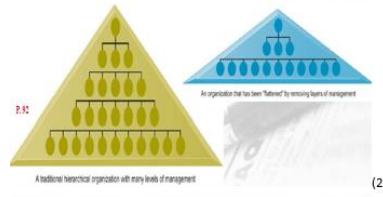
What challenges and issues make managers pay less attention to the management information system. What are the challenges and issues that managers pay less to the management information system. It is not clear why the return on investment? In addition, why the return on investment is not clear in this system? Our presented model in this paper, investigate and analyze the issues and impact of on management information system on the organizational performance. In addition, we try to convince managers to invest in the field of information management systems. Given the pace of technological progress in the modern era, managers must apply new technologies to survive their organization and succeed in global competition. Otherwise, their organization will fail. Now we affirm to main factors.

1. Management information system

A management information system (MIS) focuses on the management of information systems and is defined as a combination of human attempts by computer to collect, store, recover information by using communication systems, it is used for improving management of organization activities [1-2]. Management information systems, due to having advantages such as closer communication, more accurate control and more reliable data collection and

faster processing of data and transforming them into information needed by managers are used in planning, organizing, leading and motivating, reporting and control. They conduct management practices in the organization with the utmost precision and efficiency within a much lower time [3] There are systems to control materials and information harmoniously and a management information system (MIS) is considered as one of the important systems in this field. The following keywords are used to express the MIS: (1) network, (2) open system, (3) down Sizing, (4) multi-vendor and, that is to say by the other words, as ^a4F and 1R^o, (1) Fast, (2) Flexible, (3) Flat, (4) Fusion, (5) Real [4] Today, information systems are comprehensive and interactive tools that have an effective presence in all decision-makings and organizational operations. Therefore, the system can have different effects on organization that are shown in the chart below [5].

	Details		Charts
Economic effects	Replacement of production factors	From an economic standpoint, information technology and information systems can be used as a factor of production by the organization and act as alternative for traditional investments(machinery and building) human resources (middle managers and office staff)	(1)
	Transaction cost theory	According to the theory of transaction, traditionally companies increase their size to reduce transaction cost, but IT can potentially reduce transaction costs in fixed size of organization, or increase revenue without increase in size.	
Structural effects	Flattening the structure	Information systems can reduce the number of levels in the organization by providing necessary information for managers to control more employees, and with providing more authority to low-level employees in the decision-making	(2)
	Increasing the flexibility	Information system help large and small organizations have more flexibility and overcome the limitations imposed to them by their size.	
	Reducing resistance to change	The use of information systems requires changing the current way that force employees get to work without any awards . System information can affect who, to whom, when, where and how works are done in the organization.	(3)



2. Balanced Scorecard

Balanced Scorecard (BSC) is a new management concept that helps managers at all levels to monitor their key activities, and the creators of this masterpiece are David Norton and Robert Kaplan[6]. The Balanced Scorecard is a strategy performance management tool supported by design methods and automation tools and can be used by managers to keep track of the execution of activities by the staff within their control and to monitor the consequences arising from these actions. According to basic concept of this mode, having good vision and strategy are absolutely necessary to reach the strategic success in the organization. It should be noted that to success in this field, these two elements must be modeled by the management team and have to be clearly transmitted to all factors in the organization, then to be continuously monitored. According to the second fundamental concept, in order to to maintain a healthy and efficient organization, both for short and long term, management must have a multi-perspective based approach on organization. The BSC method proposes to reach the final goal of the organization – the profit (above all, the financial profit), approaching performance interpretation from more Than one perspective. Four processes that bind the short term activities to long term objectives form the basis of the BSC frame [7]

Balanced Scorecard	
Financial Scorecard	<p>Is used in order to identify needs and financial performance. Financial metrics are of the most important components of the scorecard. In particular, for-profit organizations these criteria tell us that successful implementation of goals determined in three previous aspects ultimately leads to what results and financial achievements. All efforts to improve customer satisfaction, quality and to reduce delivery time of our products and services if not lead to tangible financial results will have no value.</p>
Client Scorecard	<p>In order to understand the level of customer satisfaction (through quantitative and qualitative assessments about the goods or services offered) are used</p>
Internal processes Scorecard	<p>Is used to assess the required processes in the organization. In this perspective, organizations need to identify processes that with excelling in them, they can continue to create value for our customers and shareholders. Achieving each of the goals of customer needs efficient and effective implementation of a series of operational processes. These processes should be set in terms of internal processes and appropriate criteria need to be developed to control the development progress.</p>
Learning & development Scorecard	<p>This aspect focuses on training, knowledge. How to use it to be present and survive in the competitive market. When you determine goals and criteria of customer and internal processes, immediately you notice the gap between required skills and capabilities of staffs and their current levels of skills and capabilities. So objectives and criteria of this perspective should be determined in order to fill this gap and appropriate measures should be determined to control their development.</p>

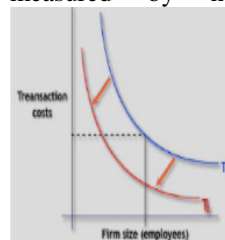
[8-12]

II. Background of the Research

Based on searches conducted on databases such as (Emerald, sciencedirect, googlescholar, IEEE, etc.) as most relevant literature of research and given that the majority of articles, books and journals, information management systems and balanced scorecard are examined separately, so this article directly investigated impact of management information systems on balanced scorecard and by taking advantage of journals, articles and books and various sources we analyzed and categorized the data.

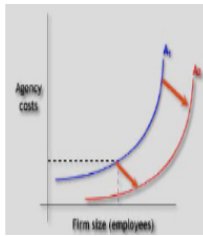
III. The Impact of MIS in the Finance

From an economic standpoint, technology of information systems can be viewed as a factor of production that can replace capital and labor. By reducing costs of information technology, information systems can replace labor and this process of replacing has been increasing in the past years and as the result, information technology led to a reduction in the number of middle managers and employees. IT leads to lower transaction costs. Reduction in transaction costs has been proposed as transaction cost theory, and it argued that information technology could reduce the cost of participation in the market. In fact, in the traditional mode, the size of the enterprise was required to have an inbound transmission (see the figure). In fact, a traditional company that does not use information technology has more transaction costs compared to a company that uses information technology (same size). IT reduced significantly the costs and as shown in Figure, it bended transaction cost curve inward that allows increase in revenue without increasing the size of the firm. Note that the measure of firm size, is measured by number of employees [13].



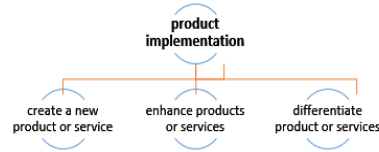
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In addition, IT reduced internal management costs. In accordance with the theory, mission costs of firm is as a core among other factors. The goal is to maximize the total revenue. A manager employs agents (employees) and self-monitors them. Therefore, with development of enterprises, the cost of coordination increases. IT as shown in the figure below, can reduce costs because it makes much easier to monitor agents activities [13].



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enhancing existing product or services, and by differentiating their products and services from those of their competitors [17]. Special relationship characteristics, including trust and commitment are considered as the factors which value creation depends on them [18].



(David M.Kroenke,(2010).Using MIS , third edition)[16]

IV. The Impact of MIS on the Customer

With the advancement of technology and the proliferation of the Internet and the importance of one-to-one marketing techniques, customer relationship management is the key point of marketing. According to theories, it can be concluded that: a strong relationship with the customer, have an important role in customer loyalty, which leads to profitability. Information technology plays an important role in creating a strong relationship as well as customer relationship management technology development. In addition, it speeds up investment in operations, Therefore, focus on customer and relationship management is the base of marketing and business philosophy for many organizations that are seeking competitive advantage [14]. We are interested in both buyers and potential buyers in the electronic markets. Corporate buyers, business partner, and other outsiders are four elements related to customer in interorganizational systems. In today's markets, both traditional and electronic, the customer is considered as a queen or a king. Therefore, customer behavior is critical to the success of any market [15].



(James Edward Richard,(2008) The Impact of Customer Relationship Management (CRM) Technology on Business-to-Business Customer Relationships. A thesis) [14]

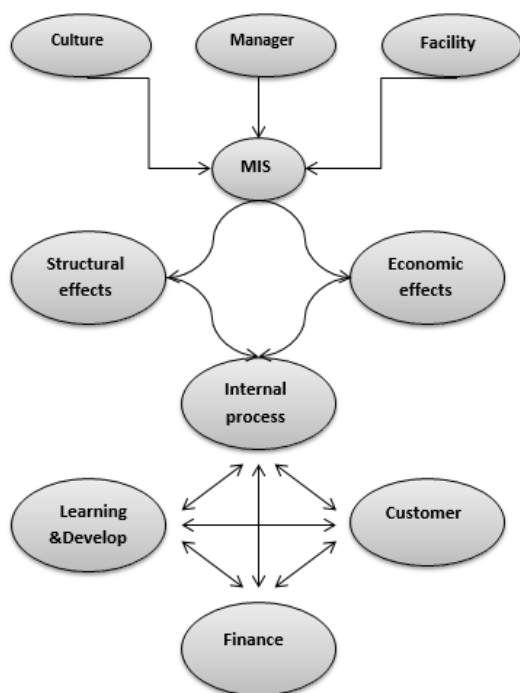
VI. The Impact of MIS on the learning & Development

A little value can be achieved by investments in IT, unless complemented with HR training and incentive programs. And, conversely, many HR training programs have little value unless complemented with modern technology tools. It should be noted that investments in two fields of HR and IT must be integrated and aligned with corporate strategy if the organization is to realize their full potential. Indeed, companies usually end up with competing silos of technical specialization when separate functions like HR and IT organizationally. The IT department lobbies for buying while the HR department argues for increase in employee training [19]. From the supplier's perspective, functions of business relationships directly are the creation of higher profits from the products and services offered (profit function), growth of trade volumes (volume function), and the possibility to sell, e.g. over-capacity (safeguard function) [20,21]. There is formal training in technical matters, change management, and business which can be done by strong IT human resources; relevant experiences have achieved by them; they understand business strategy and problems; synergy with other business units is created by them; and the habit of learning and acquiring new knowledge developed by them as needed [22,23].

V. The Impact of MIS on the Internal Process

As well as, many stakeholders have to consider fulfilling a strategic need IS, both inside and outside the organization. Thus, in order to ensure that these applications fulfill their needs and are designed to fit in with their requirements, abilities, education, work - and so on, the stakeholders need to be involved in the development of 'their' systems. It is clear that the way IS developed is crucial, and the success or failure of the applications themselves will be affected by the degree to which stakeholders are involved [16]. Competitive advantage can be achieved for organizations by creating new product or services, by

VII. The Proposed Model



The model that we have presented show that organizations must use three important factors in the use of management information systems. The manager, culture and the possibilities that each play an important role. Then management information system has two important effects that include economic and structural effects. These effects have great impact in four areas of the Balanced Scorecard that we here mentioned the effects and these four steps could be see next paragraph in detail. In the first step, managers should use management information systems in the internal processes to gather necessary information about markets, needs, education, jobs, employees, etc. within minimum time and expense to be able to control more number of employees and this in turn removes surplus staff and middle managers. They also will be able to offer new and different productions and services and by excelling in products and services in competitive markets, they gain competitive advantage.

In the second step, managers using management information systems in the field of development and learning, increase the level of knowledge and how to use the facilities. This leads to delegation of authority to the staff, motivate them, and will reduce their resistance to the changes. In addition, management information system can provide distance and coordinated learning that this factor should reduce the cost of training.

In the third step, management information system helps managers assess the quality and quantity of goods and services using information gathered from customers at the lowest cost and time to develop quality and quantity of products and services, which leads to increased customer satisfaction.

In the fourth step, management information system can replace traditional capital such as (buildings and machineries) and the labor (employees) without changing the size of the organization and it reduces the transaction costs. The impact on the management information systems on steps 1 to 3, Finally reduces costs and increase profitability and productivity, which is the goal of all managers.

CONCLUSION

According to what was mentioned, in this study, a model was discussed for the effectiveness of information systems on organizational performance with a balanced scorecard approach.

In this study the effects of information systems - economic impact of structural effects- on all aspects of organizational performance (financial, customer, learning and growth, internal processes) are reviewed. There was a positive and significant relationship between these criteria and all aspects of performance organization. In general, it can be concluded that managers can collect, clear and accurate information about the market needs, staff etc. using management information systems in the field of internal processes with minimum cost and time to determine the purpose and strategy of organization. Managers can use management information systems in the field of development and learning in minimum time and cost to increase knowledge of staffs. In addition, it can be sad that management information system help managers increase customer satisfaction with the least possible cost and time. Finally, information systems can replace factors that reduce costs and increase profitability and productivity.

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