

IMPROVING ACCOUNTING INFORMATION SYSTEMS TO FACILITATE SUPPLY CHAIN MANAGEMENT

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ABSTRACT: *Supply chain management is among the most critical factors necessary for creating a competitive advantage for a company. In the current competitive market environment, firms strive to respond as well as offer its customers services faster. The information technology market is huge and is fast growing. Particularly, cloud computing is currently shaping the way various activities such as accounting, finance, and supply chain management are organized in the organization. Accounting information systems (AIS), being part of the management information systems, represents one of the most significant systems in the economic unit and it varies across different organizations depending on their application and the importance attached to them. Several organizations integrate and automate their business operations through the use of AIS. AIS is a computer-based system that increases the control as well as enhances the coordination of the operations of the organization. Some of the primary functions performed by AIS are data maintenance, data collection, data security, knowledge management, and information generation. Good AIS seeks to take advantage of surrounding circumstances to improve the quantity and quality of the information so as to enhance the users' delivery mechanism hence providing different users with diverse types of important information to meet their demands. This paper examines how the integration of AIS assists in improving the company's supply chain management in the Bahraini retail market. This research study found out that AIS increases the efficiency of information sharing between various parties such as the suppliers and other stakeholders thereby streamlining supply chain management in retail firms in Bahrain.*

KEYWORDS: Enterprise Resource Planning, Bahrain, Accounting Information Systems, Supply Chain,

INTRODUCTION

Although the law requires a continuous production of accounting information to ensure that accounting and financial regulations improve financial performance, poor accountability and persistent misuse of resources generally exist (Soudani, 2012). The quality of accounting information should be measured based on their reliability, accuracy, relevance, clarity, and timeliness.

There is the need for maintaining high standards of quality of financial information to ensure that it serves its objective of aiding good decision-making. The commitment of the management towards ensuring higher standards of quality in accounting information and financial reporting has been identified as the most significant factor that contributes to the achievement of business success. However, Garrison et al. (2010) argued that the implementation of accounting systems often demands huge amounts of capital investment sometimes leading to unsatisfactory results despite investing millions of dollars in the systems. Thus, there is no guarantee that a system delivered on time and within the stipulated budget will give the expected results. The role played by an organization's AIS is significant since its

necessity comes from the level of contribution it makes to the improvement of the organization's value chain and how it optimally allocates various resources under uncertainty and risk conditions surrounding the business.

Problem Statement

AIS plays a significant role on enhancing financial report quality to improve supply chain management and other functions in different organizations. However, limited research covering the role that accounting information technology plays shows that there is the need to conduct more research to discover new potentialities as well as benefits that AIS brings to the management of an organization's supply chain activities. Currently, different organizations are designing more sophisticated AIS to enhance their performances. This research seeks to examine the effect of AIS design and implementation on the firm's supply chain management. Thus, this paper aims at fulfilling two purposes. First, this paper reviews all the empirical research on accounting information systems. Second, this paper aims at identifying the extent to which retail firms in Bahrain use AIS to enhance supply chain management using Carrefour Bahrain as a case study. The paper is divided into four subsections to achieve its purpose. These sections are the introduction, review of empirical studies and related literature, conclusion, and the recommendations part.

Study Objectives

AIS provides the managers with the necessary information needed in discharging their duties in an effective as well as an efficient manner in such areas as planning, performance evaluation, resource control, and decision making. Therefore, AIS is considered as one of the most significant systems of the organization. The main objective of this research is to assess the effects of AIS on the quality of financial reporting and how it positively contributes to the improvement of a retail firm's supply chain management in Bahrain.

REVIEW OF EMPIRICAL STUDIES AND RELATED LITERATURE

Crucial Function of Supply Chain Management in the Organization

The success of most companies in the current world depends on their supply chain management efficiency. Also, most organizations are getting into more strategic alliances by building more networks and virtual relationships. Thus, the entire process of supply chain management involves the management of raw materials until they reach the end users. According to Li et al. (2006), more companies have turned their focus to customer satisfaction while decreasing the managerial cost control of their daily logistical operations. As a result, the reduced cost control, as well as an increased supply chain partners, has led to the development of the concept of supply chain management (Ngai, Chau, & Chan, 2011). According to Ngai, Chau, and Chan (2011), the main objective of supply chain management is to enhance trust as well as increase the collaboration between all the related parties thereby improving the management of inventory.

Most firms always desire to foster a good relationship with their suppliers so as to reduce the costs of the products they purchase from the suppliers, decrease the lead-time, and improve the quality as well as enhance the level of service. Simchi-Levi et al. (2008) explained that supply chain management involves the management of supply chain in a way that allows the

production and distribution of products at the correct quantities, supplied to the right locations, and on the right time to reduce the costs while satisfying the needs of the customers.

Supply chain management is critical to the satisfaction of customers while at the same time enhancing the position of the company in the market. Thus, supply chain management is critical to the success of the business since it has a greater impact on the profitability as well as the value of the company it reduces the use of costly fixed assets like warehouses, plants, and the cost of transportation in the supply chain (Ngai, Chau, & Chan, 2011). Becoming more responsive to the needs of the customers and availing the products they want on time greatly increases sales revenues. The acceleration of the delivery of products increases cash flow and the accounts receivable turnover becomes faster. Wahyuni (2010), Park and Lee (2014), and Lavia López and Hiebl (2014) argue that information sharing between different partners along the supply chain performs a significant function in the supply chain management. The aim of this paper is to explore the nature of the collaboration existing between retailers in Bahrain and their suppliers as well as the degree of operational as well as the integration of information. The research will utilize a case study approach (using Carrefour in Bahrain as a case study) to offer a better understanding of the use of AIS to enhance relationships between the suppliers and retailers in Bahrain.

The Role of Computerized AIS in Supply Chain Management

Computerized AIS is a computer-based method used for tracking financial transactions using information technology tools. AIS is responsible for the processing of financial data used for both internal as well as the external decision-making process. The success of accounting in the recent centuries has been overwhelming. Accounting gained a prominent position at the onset of the industrial revolution although it was later subject to a significant amount of criticism after the industrial revolution especially among the academicians, accountants, and customers of accounting information. Users of accounting information are no longer satisfied with the information they are receiving making them look for more comprehensive and solid sources of accounting information (Belfo & Trigo, 2013; Park & Lee, 2014). The traditional accounting system is primarily suitable when firms are striving to achieve costs efficiency in a market that is relatively stable. Radneantu, Gabroveau, and Roxana (2010) argued that managers are able to take the operational decisions in the current age by providing information related to the production elements with variance analysis reports. Company values depend on the events occurring on a daily basis. The lag, as well as the increasing gap that exists in financial reporting, is making accounting reports less beneficial. Supply chain management is increasingly becoming important to the success of companies in the current world. Also, irrespective of the sector in which an organization operates or the size of the organization, more companies are increasingly engaging in strategic alliances and increasing virtual networks and relationships (Hall, 2010). Thus, the requirement for a reliable as well as a timely information delivery is compulsory. Supply chain benefits from management accounting since they assist in analyzing the main indicators of performance as well as the information related to the costs of operations (Park & Lee, 2014). This inter-organizational relationship helps in enhancing value and reducing costs.

Management accountants can assist supply chain managers in several ways including reporting as well as the improving of the management of both financial and non-financial performance across the supply chain, using technology to improve performance, supporting as well as promoting sustainable distribution across the supply chain, increasing partnership throughout the supply chain, and creating trust among various collaborators (Coad, 2006; Hall, 2010).

According to Munteanu (2013) and Soudani (2012), supply chain management involves the coordination as well as the collaboration of various parties such as the suppliers, customers, and retailers. Supply chain management can be seen as the integrating function which must be connected to various other business processes and functions inside and outside the organization. There is the need for an efficient flow of information to create value through the supply chain.

The supply chain management consists of the information providers, clients, and the network of distribution, among other factors (Hall, 2010). Thus, there is the need to consider the fact that the quantitative information provided by accounting plays a significant role in streamlining various functions in the supply chain. The past events provide specific data relating to the stocks, costs, recorded results, and debts. This information can be used to make predictions about the future as well as help in designing policies relevant to the future. Thus, the integration of supply chain management is important in improving the performance of the firm. Management accounting systems must be used to measure the costs across the supply chain and calculate the total costs across the activity chain as to enable accounting and supply chain to bring desirable results (Soudani, 2012).

According to Sutton, Smedely, and Arnold (2008), the current business environment is more responsive to the needs of the customers other than being conscious of quality and costs minimization. The scholars further argue that the current business environment involves a competition between supply chains hence the success of the firm relies on the supply chain's success and viability of the individual supply chain partners, enterprise policies, and the key strategic decisions made by the organization. Therefore, there is a greater demand for the systems to connect the supply chains. However, the current accounting models do not recognize the complexity of the need to integrate the supply chains. A failure to integrate various trading stakeholders so as to ensure that the information across the supply chain is secured can subject companies to different risks. Sutton, Smedely, and Arnold (2008) used the Cisco Company as a good example of how a poor integration of systems can bring inefficiency and failure within the supply chain. Sutton, Smedely, and Arnold (2008) noted that Cisco Company system depended on outsourced manufacturing as well as growth acquisition, a system which led to the failure of the company in 2001 when the company's sales for the first quarter of 2001 declined by \$2.2 billion due to a confusion and unstable inventory in the company's supply chain.

According to MamićSačer and Oluić (2013), AIS is important in the preparation of quality accounting information. Applying the tools of information technology in accounting significantly impacts the company's operations hence there is the need for organizations to fully understand the role played by information technology in different organizational processes. AIS that is supported by suitable information technology is the primary pillar and a source of success in the knowledge economy (O'Brien & Marakas, 2006). Thus, accounting in the current business environment is completely different from the practices done in the previous decades. For instance, management accounting must be integrated into the management process while financial accounting must become more responsive to the information needs of the customers (O'Brien & Marakas, 2006). Other than undertaking their traditional accounting roles only, accountants have also taken more active roles in the management of organizations such as taking part in the firm's decision-making process and strategy formulation. Thus, accountants must be more knowledgeable and equipped with various skills.

This part discussed the role played by computerized AIS in the supply chain management. Information is very important in the creation and implementation of supply chain strategies as well as enhancing collaboration among different partners in the supply chain. AIS is a tool that can be used to collect and report the information in the supply chain. The next section will explore the status of information technology (IT) in Bahrain and how the improvement of IT infrastructure can help in facilitating the integration of information within the supply chain among the retailers in Bahrain.

The Status of IT infrastructure in Bahrain and the Implementation of AIS

Although Bahrain's IT market is small, the economy is home to different IT firms within the fields of IT distribution, IT services, IT consultancy, customer support centers, and the development of software. According to the World Bank Group (2016), the country is ranked the first in the Middle East and North Africa (MENA) for ICT readiness, hence Bahrain has the most affordable and competitive ICT services in MENA. Bahrain was the first country in MENA to completely deregulate its telecommunications market and the country is currently looking forward to building cloud first policy regulations. Thus, the government of Bahrain is fully committed to creating a friendly IT regulatory environment, increase access to the MENA market, become a cost competitive market, build a robust infrastructure, and create a strong human capital in IT (World Bank Group, 2016).

Brinkley (2006) defined a knowledge economy as an economy where knowledge is diffused across all the sectors other than some specified industries only. Organizations that manage for the stakeholders strive to create trust in the stakeholder relationship. Thus, all the partners are able to share information about their utility functions. As a result, the ability of companies to allot capital to areas that benefit them is increased. Kamhawi (2008) noted that there are several significant barriers to the implementation of ERP systems in the Bahraini context. However, with a potential for the development of IT infrastructure, knowledge-sharing among various partners in the retail market's supply chain through the use of AIS can be implemented with ease. Particularly, cloud computing will make it possible to implement AIS and help firms to collect the necessary information for strategic decision-making in the Bahraini retail market (Jia, 2009; Ruiz-Agundez, Penya, & Bringas, 2011). The most significant benefit of cloud computing is that it allows for the management of software and data offsite (Ruiz-Agundez, Penya, & Bringas, 2011). The next section will explore the state of the retail market in Bahrain.

A Case Study of AIS Implementation in Carrefour in Bahrain

The concept of quality accounting information is touted as a new model for achieving significant benefits that show that the need for the management to communicate all the crucial information to various partners such as the suppliers and the customers to understand their demands and serve them in a timely way possible. Carrefour Bahrain will be used as a case study in this research to reflect the application of accounting information system in the biggest retailers in Bahrain to improve supply chain management through an improved customer and supplier experiences. Carrefour has extensively integrated technology in most of its operations. The company has implemented Enterprise Resource Planning (ERP) systems that are backed by Electronic Data System (EDS) (Hines, 2014). Also, the company uses a warehouse management system supplied by Generix. Carrefour Bahrain's ERP system primarily focuses on management of business information and integrating disparate systems across the finance, procurement, inventory control, and distribution to which provides a macro view into the firm (Hines, 2014). The system ties in different supply chain partners who help in finding raw

materials hence streamlining delivery to customers. Since the company's ERP system collects all the relevant information across the board, Carrefour Bahrain's supply chain system pulls the necessary data from the company's ERP systems thereby easing the deployment process (Hines, 2014). Different branches have stand-alone supply chain management systems that integrated into the company's ERP system. Thus, other components such as inventory checks, manufacturing, and financials are factored in. With this ERP system in place, Carrefour Bahrain has been able to satisfy the needs of customers and performed relatively better Bahraini retail market.

The implementation of ERP systems in Carrefour Bahrain resulted in lower operating costs, efficient and streamlined accounting processes made possible through the systems sharing services, standardized procedures, and data sharing across the entire organization. Currently, Carrefour has a unique IT infrastructure and systems that are used to manage the company's rapidly expanding financial operations in Bahrain. The company's profitability can be attributed to the reduction of headcount due to the effective implementation of AIS that streamlines the operations of the company. The ERP systems resulted in centralized accounting functions, a decrease in manual work in most departments, and it facilitated the non-inventory purchasing negotiations with the company's suppliers. Carrefour Bahrain has been expanding rapidly in recent times without any significant additional investment mainly due to the efficiency brought about by its efficient AIS systems. The success of Carrefour's supply chain management is also attributed to its ERP and warehouse management system further underlining the significance of AIS in organization planning and management of activities.

CONCLUSION

In conclusion, the accounting information system (AIS) plays a critical role in organizations because it contributes in the improvement of the value chain, provides different resources, and allocates those resources optimally under various risk conditions. Effective internal controls are also necessary for maintaining qualitative features of accounting information. The function of internal control procedures is to ensure that there is a reliable accounting reporting, protection of assets, improving efficiency in accounting transactions, fraud prevention, and a timely preparation of accounting data.

AIS plays a significant role on enhancing financial report quality to improve supply chain management and other functions in different. The success of most retail companies in the current world depends on their supply chain management efficiency. Also, most organizations are getting into more strategic alliances by building more networks and virtual relationships. Thus, the entire process of supply chain management involves the management of raw materials until they reach the end users. The retail market is Bahrain in more competitive and more international retail firms are operating in the market. Thus, retail firms that are responsive to the needs of the customers gain a significant competitive advantage in the market. AIS not only play an accounting role in the organization but it also contributes to the improvement of efficiency in various other activities such as planning and strategy implementation. Carrefour is one of the biggest retail firms in Bahrain that has used AIS to streamline its supply chain management to satisfy the needs of its customers. The company's ERP system is backed by EDS and it uses a warehouse management system as well. By primarily focusing on management of business information and integrating disparate systems across the finance, procurement, inventory control, and distribution departments, Carrefour's ERP system

increases supply chain efficiency by providing a macro view into the firm. Finally, Carrefour's ERP system collects all the relevant information across the board which ties in different supply chain partners who help in finding raw materials hence streamlining delivery to customers. Thus, the efficiency of Carrefour Bahrain's ERP system in improving supply chain efficiency shows that AIS can be designed and implemented to enhance supply chain management in retail markets in Bahrain.

RECOMMENDATIONS

The integration of operations alone is no longer enough in the current competitive business environment and internal infrastructure with the competitive strategy of the firm but the integration of internal processes with the suppliers of the company is critical in building an effective supply chain. Retailers in Bahrain must move a shift from the current communication means to models that are more effective. Delays in the delivery of products to the customers, as well as late payment of suppliers, negatively affect customer satisfaction in Bahrain. Thus, there is the need to integrate accounting systems with the supply chain to improve the performance of companies. Transformation can involve the introduction of electronic systems that help in simplifying as well as speeding up the process of communication. The use of an accounting information system capable of managing the supply chain through the cloud will increase the flexibility of operations. AIS allows the sharing of financial and accounting information through an integrated system hence it is a core factor in improving the relationship between the retailers and suppliers thereby resulting in a more efficient supply chain.

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