UNIVERSALJOURNAL
ISSN 2721-7132

Accounting Information System and Business Organizations

GARRY ALFONSIUS

Bachelor of Science in Business Administration at

Universal Institute of Professional Management

UIPM Singapore

i. ABSTRACT

Organizations depend on information systems to stay competitive. Information is just as much a resource as plant and equipment. Productivity, which is crucial to staying competitive, can be increased through better information systems. Accounting, as an information system, identifies, collects, processes, and communicates economic information about an entity to a wide variety of people. Information is useful data organized such that correct decisions can be based on it. A system is a collection of resources related such that certain objectives can be achieved. An accounting information system (AIS) is a collection of resources, such as people and equipment, designed to transform financial and other data into information. This information is communicated to a wide variety of decision makers. AISs perform this transformation whether they are essentially manual systems or thoroughly computerized.

Keywords: Information System, Accounting Information System (AIS), AIS & Financial Performance

ii. INTRODUCTION

An organization is a collection of decision-making units that exist to pursue objectives. As a system, every organization accepts inputs and transforms them into outputs that take the form of products and services. A manufacturing firm transforms raw material, labor, and other scarce resource inputs into tangible items, such as furniture, that are subsequently sold in pursuit of the goal of profit. A university accepts a variety of inputs, such as faculty labor and student time, and transforms these inputs into a variety of outputs in pursuit of the broad goals of education and the promotion of knowledge. Conceptually, all organizational systems seek objectives through a process of resource allocation, which is accomplished through the process of managerial decision making. Information has economic value to the extent that it facilitates resource allocation

decisions, thus assisting a system in its pursuit of goals. Indeed, information may be the most important organizational resource.

The users of accounting information fall into two broad groups: external and internal. External users include stockholders, investors, creditors, government agencies, customers and vendors, competitors, labor unions, and the public at large. External users receive and depend on a variety of outputs from an organization's AIS. Many of these outputs are of a routine nature. Accounts payable transactions with suppliers, for example, require outputs such as purchase orders and checks from an organization's AIS. Customers receive bills and make payments, which are processed by the AIS. Employees receive paychecks and other payroll-related data; stockholders receive dividend checks and routine information concerning stock transactions.

Pyramid of Information Levels in an Organization

Source: www.google.com

iii. METHOD

1. Information System

The term information system suggests the use of information technology (IT) in an organization to provide information to users. A computer-based information system is a collection of computer hardware and software designed to transform data into useful information. One might distinguish several types of computer-based information systems.

Data Processing: Electronic data processing (EDP) is the use of IT to perform an organization's transaction-oriented data processing. EDP is a fundamental AIS application in every organization. Data concerning sales transactions, purchase transactions, cash receipts and cash payments transactions, and all other financial transactions that an organization undertakes must be accurately recorded, processed, and stored if the organization is to be sustainable. As computer technology has become commonplace, the term data processing (DP) has come to have the same meaning as EDP.

Management information systems (MIS) describes the use of IT to provide decision- oriented information to managers. An MIS provides a wide variety of information beyond that which is associated with DP in organizations. An MIS recognizes that managers within an organization use and require information in decision making and that computer-based information systems can assist in providing information to managers.

Decision Support Systems In a decision support system (DSS), data are processed into a decision-making format for the end user. A DSS requires the use of decision models and specialized databases and differs significantly from a DP system. A DSS is directed at serving ad hoc, specific, non-routine information requests by management. DP systems serve routine, recurring, general information needs. A DSS is designed for specific types of decisions for specific users. A familiar example is the use of spreadsheet software to perform what-if analyses of operating or budget data, such as sales forecasting by marketing personnel.

Expert Systems An expert system (ES) is a knowledge-based information system that uses its knowledge about a specific application area to act as an expert consultant to end users. Like DSS, an ES requires the use of decision models and specialized databases. Unlike DSS, an ES also requires the development of a knowledge base— the special knowledge that an expert possesses in the decision area—and an inference engine—the process by which the expert makes a decision. An ES attempts to replicate the decisions that would be made by an expert human decision maker in the same decision situation. An ES differs from a DSS in that a DSS assists a user in making a decision, whereas an ES makes the decision.

Executive Information Systems An executive information system (EIS) is tailored to the strategic information needs of top-level management. Much of the information used by top-level management comes from sources other than an organization's information systems. Examples are meetings, memos, television, periodicals, and social activities. Some information must be processed by the organization's

information systems; however, an EIS provides top-level management with easy access to selective information that has been processed by the organization's information systems. This selective information concerns the key factors that top- level management has identified as being critical to the organization's success. Actual versus projected market share for product groups and budget versus actual profit and loss data for divisions might be key success factors for a top-level executive.

Accounting Information Systems Analogous to the preceding definitions, we might define an AIS as a computer-based system designed to transform accounting data into information. However, we use the term accounting information system more broadly to include the use of IT, transaction processing cycles, and the development of information systems.

2. Information System

Accounting Information Systems (AIS) are a tool which, when incorporated into the field of Information and Technology systems (IT), are designed to help in the management and control of topics related to organization' economic-financial area. But the stunning advance in technology has opened up the possibility of generating and using accounting information from a strategic viewpoint (El Louadi, 1998). Accounting Information System (AIS) is vital to all organizations (Borthick and Clark, 1990; Curtis, 1995; Rahman et al., 1988; Wilkinson, 1993; Wilkinson et al., 2000) and perhaps, each organization either profit or nonprofit-oriented need to maintain the AISs (Wilkinson, 2000: 3-4). On the other hand, an AIS is the whole of the related components that are put together to collect information, raw data or ordinary data and transform them into financial data for the purpose of reporting them to decision makers. To better understand the term 'Accounting Information System', the three words constitute AIS would be elaborated separately. Firstly, literature documented that accounting could be identified into three components, namely information system, "language of business" and source of financial information (Wilkinson, 1993: 6-7). Secondly, information is a valuable data processing that provides a basis for making decisions, taking action and fulfilling legal obligation. Finally, system is an integrated entity, where the framework is focused on a set of objectives (Bhatt, 2001; Thomas and Kleiner, 1995).

An accounting information system is a way of tracking all accounting and business activity for a company. Accounting information systems generally consist of six primary components: people, procedures and instructions, data, software, information technology infrastructure, and internal controls. Below is a breakdown of each component in detail.

1. AIS People

The people in an AIS are the system users. An AIS helps the different departments within a company work together. Professionals who may need to use an organization's AIS include:

- Accountants
- Consultants
- Business analysts
- Managers
- Chief financial officers
- Auditors

For example, management can establish sales goals for which staff can then order the appropriate amount of inventory. The inventory order notifies the accounting department of a new payable. When sales are made in a business, the people and departments involved in the sales process could include the following:

1. Salespeople enter the customer orders into the AIS.
2. Accounting bills or sends an invoice to the customer.
3. The warehouse assembles the order.
4. The shipping department sends the order out to the customer.
5. The accounting department gets notified of a new accounts receivable, which is an IOU from the customer that's typically paid within 30, 60, or 90 days.
6. The customer service department tracks the order and customer shipments.
7. Management uses AIS to create sales reports and perform cost analysis, which can include inventory, shipping, and manufacturing costs.

With a well-designed AIS, everyone within an organization can access the same system and retrieve the same information. An AIS also simplifies the process of reporting information to people outside of the organization, when necessary.

For example, consultants might use the information in an AIS to analyze the effectiveness of the company's pricing structure by looking at cost data, sales data, and revenue. Also, auditors can use the data to assess a company's internal controls, financial condition, and compliance with regulations such as the Sarbanes-Oxley Act (SOX).

The AIS should be designed to meet the needs of the people who will be using it. The system should also be easy to use and should improve, not hinder efficiency.

2. Procedures and Instructions

The procedure and instructions of an AIS are the methods it uses for collecting, storing, retrieving, and processing data. These methods are both manual and automated. The data can come from both internal sources (e.g.,

employees) and external sources (e.g., customers' online orders). Procedures and instructions will be coded into the AIS software. However, the procedures and instructions should also be "coded" into employees through documentation and training. The procedures and instructions must be followed consistently in order to be effective.

3. AIS Data

An AIS must have a database structure to store information, such as structured query language (SQL), which is a computer language commonly used for databases. SQL allows the data that's in the AIS to be manipulated and retrieved for reporting purposes. The AIS will also need various input screens for the different types of system users and data entry, as well as different output formats to meet the needs of different users and various types of information.

The data contained in an AIS is all of the financial information pertinent to the organization's business practices. Any business data that impacts the company's finances should go into an AIS.

The type of data included in an AIS depends on the nature of the business, but it may consist of the following:

- Sales orders
- Customer billing statements
- Sales analysis reports
- Purchase requisitions
- Vendor invoices
- Check registers
- General ledger
- Inventory data
- Payroll information
- Timekeeping
- Tax information

The data can be used to prepare accounting statements and financial reports, including accounts receivable aging, depreciation or amortization schedules, a trial balance, and a profit and loss statement. Having all of this data in one place—in the AIS—facilitates a business's record-keeping, reporting, analysis, auditing, and decision-making activities. For the data to be useful, it must be complete, accurate, and relevant.

On the other hand, examples of data that would not go into an AIS include memos, correspondence, presentations, and manuals. These documents might have a tangential relationship to the company's finances, but, excluding the standard footnotes, they are not really part of the company's financial record-keeping.

4. AIS Software

The software component of an AIS is the computer programs used to store, retrieve, process, and analyze the company's financial data. Before there were computers, an AIS was a manual, paper-based system, but today, most companies are using computer software as the basis of the AIS. Small businesses might use Intuit's QuickBooks or Sage's Sage 50 Accounting, but there are others. Small to mid-sized businesses might use SAP's Business One. Mid-sized and large businesses might use Microsoft's Dynamics GP, Sage Group's MAS 90, or MAS 200, Oracle's PeopleSoft, or Epicor Financial Management.

Quality, reliability, and security are key components of effective AIS software. Managers rely on the information it outputs to make decisions for the company, and they need high-quality information to make sound decisions.

AIS software programs can be customized to meet the unique needs of different types of businesses. If an existing program does not meet a company's needs, the software can also be developed in-house with substantial input from end-users or can be developed by a third-party company specifically for the organization. The system could even be outsourced to a specialized company.

For publicly-traded companies, no matter what software program and customization options the business chooses, Sarbanes-Oxley regulations will dictate the structure of the AIS to some extent. This is because SOX regulations establish internal controls and auditing procedures with which public companies must comply.

5. IT Infrastructure

Information technology infrastructure is just a fancy name for the hardware used to operate the accounting information system. Most of these hardware items a business would need to have anyway and can include the following:

- Computers
- Mobile devices
- Servers
- Printers
- Surge protectors
- Routers
- Storage media
- A back-up power supply

In addition to cost, factors to consider in selecting hardware include speed, storage capability, and whether it can be expanded and upgraded.

Perhaps most importantly, the hardware selected for an AIS must be compatible with the intended software. Ideally, it would be not just compatible, but optimal—a clunky

system will be much less helpful than a speedy one. One-way businesses can easily meet hardware and software compatibility requirements is by purchasing a turnkey system that includes both the hardware and the software that the business needs. Purchasing a turnkey system means, theoretically, that the business will get an optimal combination of hardware and software for its AIS.

A good AIS should also include a plan for maintaining, servicing, replacing, and upgrading components of the hardware system, as well as a plan for the disposal of broken and outdated hardware, so that sensitive data is completely destroyed.

6. Internal Controls

The internal controls of an AIS are the security measures it contains to protect sensitive data. These can be as simple as passwords or as complex as biometric identification. Biometric security protocols might include storing human characteristics that don't change over time, such as fingerprints, voice, and facial recognition.

An AIS must have internal controls to protect against unauthorized computer access and to limit access to authorized users, which includes some users inside the company. It must also prevent unauthorized file access by individuals who are allowed to access only select parts of the system.

An AIS contains confidential information belonging not just to the company but also to its employees and customers. This data may include:

- Social Security numbers
- Salary and personnel information
- Credit card numbers
- Customer information
- Company financial data
- Financial information of suppliers and vendors

All of the data in an AIS should be encrypted, and access to the system should be logged and surveilled. System activity should be traceable as well.

An AIS also needs internal controls that protect it from computer viruses, hackers, and other internal and external threats to network security. It must also be protected from natural disasters and power surges that can cause data loss.

3. AIS & FINANCIAL PERFOMANCE

The AIS design can be defined in terms of the information characteristics that it provides (Chenhall and Morris, 1986; Gul, 1991). Chenhall and Morris (1986) described AIS according to the perceived usefulness of four information attributes, namely scope, timeliness, level of aggregation, and integration. Scope refers to the measures being used and to the extension of AIS in time and space. Then information could focus on future vs. historical events or external vs. internal events. Also, the information could be quantified in monetary or non-monetary terms. Timeliness refers to the frequency, speed of reporting and the orientation of the information (e.g. short or long run). Aggregation refers to the way data is aggregated in time periods, functions or in accordance with decision models. Finally, integration refers to the need of providing information to reflect the interaction and coordination effects of several functions in the organization. These four attributes have been analyzed for comparing AIS and organizational strategies and performance (Gerdin and Greve, 2004). Only recently have studies begun to examine whether organizations systematically vary the AIS design to support their chosen strategy, recognizing that AIS have the potential to facilitate strategy management and enhance organizational performance (Gerdin and Greve, 2004). Appropriate review between designing of AIS and performance of commercial units by analyzing strategies explains that high performance of commercial units depends on a wide range of accounting information systems (Boulianne, 2007). So many studies begun to examine whether organizations systematically vary the AIS design to support their chosen strategy, recognizing that AIS have the potential to facilitate strategy management and enhance organizational performance (Gerdin and Greve, 2004).

Existing literature offers scant evidence of the relationship between these AIS and financial performance; though it is important to highlight the study made by Elena Urquia Grande, Raquel Perez Estebanez and Clara Munoz Colomina (2010) which discovered a positive association between AIS design and organizational strategy and performance. The successful implementation of AIS could save shareholder's money and time. The information value generated by AIS to shareholders and stakeholders in making investment decisions (Zulkarnain Muhamad Sori, 2009).

Financial managers need the financial and accounting data provided by AIS to evaluate the firm's past performance and to map future plans. Therefore, the organizational performance is measured in terms of ROA (Return on Assets) and ROE (Return on Equity) these ratios are financial performance measuring ratios (Sadia Majeed, 2011).

Return on equity is a key to provides useful information about the performance of debt in the capital structure that the general manager must try to influence in order to improve financial performance (Alan Miller, Michael Boehlje and and Craig Dobbins, 2001).

If AIS design can be linked to financial performance and financial performance is linked to organizational performance, then we can argue that AIS design can be expected to have positive effects on organizational performance through ROA and ROE. However, other supported the use of Return on Assets (ROA), Return on Equity (ROE) as the most common measures of organizational performance. Therefore, we formulate the following hypotheses.

iv. CONCLUSION

Accounting information systems of the past focused on the recording, summarizing and validating of data about business financial transactions. These functions were performed for the various groups within the organization that were concerned about the respective decisions associated with financial accounting, managerial accounting, and tax compliance issues (Hollanderet al.1996). The need to integrate these often-diverse systems led to the accountant's appreciation of shared databases that provide a cohesive picture of the organization's data, eliminating duplications and reducing data conflicts (Moscove, et al. 1999). The results of this study showed that AIS improve financial statements and reporting correctness in Iran. However, the results also revealed that there is huge gap between what AIS and what should be. The major weakness of AIS in Iran as follow: in is not affected to Iranian accounting standards, it is not confirmed with other financial and managerial systems, it is not covering all information needs have company and financial information and it is not covering all management levels information in Iran. So, to this situation, the managers which are aware of AIS benefits should take more as well as academicals action for reducing such gaps in Iranian corporate sectors.

v. REFERENCES

1. Bhatt, G. D. (2001). Knowledge management in organizations: examining the interaction between technologies, techniques, and people. Journal of Knowledge Management, 5(1), 68-75. http://dx.doi.org/10.1108/13673270110384419
2. Boonmak, S. (2001). Accounting information systems.
3. Borthick, A. F., & Clark, R. L. (1990). Making accounting information systems work: An empirical investigation of the creative thinking paradigm. Journal of Information Systems, 4(3), 48-62.
4. Boulianne, E. (2007). Revisiting fit between AIS design and performance with the analyzer strategic-type. International Journal of Accounting Information Systems, 1- 16. http://dx.doi.org/10.1016/j.accinf.2006.12.001.
5. Chenhall, R.H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. Accounting, Organizations and Society, 28(2-3), 127-168. http://dx.doi.org/10.1016/S0361-3682(01)00027-7.

6. El louadi, M. (1998). The relationship among organisation structure, information technology and information processing in small Canadian firms. Canadian Journal of Administrative Science, 15(2), 99-180.
7. Fontinelle, A. (2020). Introduction to Accounting Information System (AIS). Available at: https://www.investopedia.com/articles/professionaleducation/11/accounting-information-systems.asp.
8. Gerdin, J., Greve, J. (2004). Forms of contingency fit in management accounting research-a critical review. Accounting, Organizations and Society, 29, 3-4, 303-326. http://dx.doi.org/10.1016/S0361-3682(02)00096-X
9. Hollander, A., E. Denna, and J. Cherrington, (1996). Accounting, Information Technology, and Business Solutions. Chicago, IL: Richard D. Irwin.
10. Miller, A., Boehlje, M., & Dobbins, C. (2001). Key Financial Performance Measures for Farm General Managers. Department of Agricultural Economics, Purdue University, ID-243, 5-10.
11. Moscove, S., M. Simkin and N. Bagranoff (1999). Core Concepts of Accounting Information Systems, New York, NY: John Wiley & Sons, Inc.
12. Sadia M. (2011). The Impact of Competitive Advantage on Organizational Performance, European Journal of Business and Management. ISSN 2222-1905, 3(4).
13. Salehi, M., Rostami, V., & Mogadam, A. (2010). Usefulness of accounting information system in emerging economy: Empirical evidence of Iran. *International Journal of Economics and Finance*, *2*(2), 186-195.
14. Soudani, S. N. (2012). The usefulness of an accounting information system for effective organizational performance. *International Journal of Economics and Finance*, *4*(5), 136-145.
15. Thomas, V., & Kleiner, B. H. (1995). New developments in computer software. Industrial Management & Data Systems, 95(6), 22-26. http://dx.doi.org/10.1108/02635579510091296.
16. Wilkinson, J. W. (1993). Accounting Information Systems: Essential Concepts and Applications. Second Edition. New York: John Wiley & Sons Inc.