Management accounting and management information systems

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Abstract: Management Information Systems (MIS) is the key factor to facilitate and attain efficient decision making in an organization. Management accounting can be viewed as Management-oriented Accounting. The term management accounting is composed of 'management' and 'accounting'. The word 'management' here does not signify only the top management but the entire personnel charged with the authority and responsibility of operating an enterprise. Management accounting combines accounting, finance and management with the leading edge techniques needed to drive successful businesses. Information systems are more likely to impact management accounting as ERP systems are hard to change once they are configured. That information systems are able to deliver support for management accounting is not a new idea. It is argued, on the other hand, that the first use of information systems was in relation to accounting.

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1. Introduction

Currently, organizations are in the race for enhancing their capability in order to survive in the competitions of the new century global market. Therefore, organizations are attempting to advance their agility level by improving the decision making process to be more efficient and highly effective to meet the successive fluctuations of the market. In an effort to achieve this, many modern organizations, either mid or large sized, have concerned with a cycle of progressive investments in and adopted new management information systems components. A management information system (MIS) provides information that organizations need to manage themselves efficiently and effectively. Management information systems are typically computer systems used for managing five primary components: hardware, software, data (information for decision making), procedures (design, development and documentation), people (individuals, groups, or organizations), Management information systems are distinct from other information systems, in that they are used to analyze and facilitate strategic and operational activities. Whitten et al. (2004), stated that "information is an arrangement of people, data, process, and information technology that interact to collect, process, store and provide as output the information needed to support an organization," which indicates that information system is an arrangement of groups, data, processes and technology that act together to accumulate, process, store and provide information output needed to enhance and speed up the process of decision making. Information is essential for the endurance of a financial organization in the global and competitive market. The nature of globalization and competitiveness in the market stress on the importance of developing an organization capability through better enhancing MIS.

The term management accounting is composed of 'management' and 'accounting'. The word 'management' here does not signify only the top management but the entire personnel charged with the authority and responsibility of operating an enterprise. The task of management accounting involves furnishing accounting information to the management, which may base its decisions on it. It is through management accounting that the management gets the tools for an analysis of its administrative action and can lay suitable stress on the possible alternatives in terms of costs, prices and profits, etc. but it should be understood that the accounting information supplied to management is not the sole basis for managerial decisions. Management accounting has no set principles such as the double entry system of bookkeeping. In place of

generally accepted accounting principles, the philosophy of cost benefit analysis is the core guide of this discipline. It says that no accounting system is good or bad but is can be considered desirable so long as it brings incremental benefits in excess of its incremental costs.

Additionally, Baskerville and Myers (2002) broadly define MIS as "the development, use and application of information systems by individuals, organizations and society". In his study, Becta (2005) describes an information system as "a system consisting of the network of all communication channels used within an organization". In their study, Laudon and Laudon (2003) have defined MIS as "the study of information systems focusing on their use in business and management". The abovementioned definitions showed that MIS has underlined the development, application and validation of relevant theories and models in attempts to encourage quality work in the area. Handzic (2001) also pays attention to the impact of information availability on people's ability to process and use information in short and long term planning and in decision making tasks. He revealed that the better the availability of information, the better the impact on both efficiency and accuracy of business decisions. Management Information System will give the banking management a new dimension in managing its knowledge and help in carrying out and maximizing the management's initiatives in harmonizing the appropriate strategies in the short and long planning (Edmondson, 2002).

2. Management accounting

The term "Management Accounting", observe, Broad and Carmichael, covers all those services by which the accounting department can assist the top management and other departments in the formation of policy, control of execution and appreciation of effectiveness. This definition points out that management is entrusted with the primary task of planning, execution and control of the operating activities of an enterprise. It constantly needs accounting information on which to base its decision. A decision based on data is usually correct and the risk of erring is minimized. Management accounting or managerial accounting is concerned with the provisions and use of accounting information to managers within organizations, to provide them with the basis to make informed business decisions that will allow them to be better equipped in their management and control functions.

In contrast to financial accountancy information, management accounting information is:

- primarily forward-looking, instead of historical;
- model based with a degree of abstraction to support decision making generically, instead of case based;
- designed and intended for use by managers within the organization, instead of being intended for use by shareholders, creditors, and public regulators;
- usually confidential and used by management, instead of publicly reported;
- Computed by reference to the needs of managers, often using management information systems, instead of by reference to general financial accounting standards.

Management accounting combines accounting, finance and management with the leading edge techniques needed to drive successful businesses. Chartered management accountants:

- Advise managers about the financial implications of projects.
- Explain the financial consequences of business decisions.
- Formulate business strategy.
- Monitor spending and financial control.
- Conduct internal business audits.
- Explain the impact of the competitive landscape.
- Bring a high level of professionalism and integrity to business.

Management accounting – a field distinct from public accounting – is a critical profession that drives business performance. By definition, management accounting is a profession that involves partnering in management decision-making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy.

The basic function of management accounting is to assist the management in performing its functions effectively. The functions of the management are planning, organizing, directing and controlling. Management accounting helps in the performance of each of these functions in the following ways:

(1) Provides data: Management accounting serves as a vital source of data for management planning. The accounts and documents are a repository of a vast quantity of data about the past progress of the enterprise, which are a must for making forecasts for the future.
(2) Modifies data: The accounting data required for managerial decisions is properly compiled and classified. For example, purchase figures for different months may be classified to know total purchases made during each period product-wise, supplier-wise and territory-wise.
(3) Analyses and interprets data: The accounting data is analyzed meaningfully for effective planning and decision-making. For this purpose the data is presented in a comparative form. Ratios are calculated and likely trends are projected.
(4) Facilitates control: Management accounting helps in translating given objectives and strategy into specified goals for attainment by a specified time and secures effective accomplishment of these goals in an efficient manner. All this is made possible through budgetary control and standard costing which is an integral part of management accounting.

3. Financial Statements Analysis

Financial Statements Analysis (FSA) refers to the process of the critical examination of the financial information contained in the financial statements in order to understand and make decisions regarding the operations of the firm. The FSA is basically a study of the relationship among various financial facts and figures is given in a set of financial statements. The basic financial statements i.e. the Balance Sheet and the Income Statement, already discussed in the preceding lesson contain a whole lot of historical data. The complex figures as given in these financial statements are dissected / broken up into simple and valuables elements and significant relationships are established between the elements of the same statement or different financial statements. This process of dissection, establishing relationships and interpretation thereof to understand the working and financial position of a firm is called the FSA. Thus, FSA is the process of establishing and identifying the financial weaknesses and strength of the firm. It is indicative of two aspects of a firm i.e. the profitability and the financial position and it is what is known as the objectives of the FSA.

4. Management Information System

The Management Information System (MIS) is a concept of the last decade or two. It has been understood and described in a number ways. It is also known as the Information System, the Information and Decision System, the Computer- based information System. The MIS has more than one definition, some of which are give below.
1. The MIS is defined as a system which provides information support for decision making in the organization.
2. The MIS is defined as an integrated system of man and machine for providing the information to support the operations, the management and the decision making function in the organization.
3. The MIS is defined as a system based on the database of the organization evolved for the purpose of providing information to the people in the organization.
4. The MIS is defined as a Computer Based Information System.

4.1 Flexibility and Flexible MIS

Rou Xing, Flexibility in English, its explanation in"21st century Greatly English to Chinese Dictionary" is: elasticity; compatibility; flexibility, it has many meanings of flexibility, winding, compatibility, flexibleness, and so on. The early research of "the flexibility" originated from the machine manufacturing industry, like flexible manufacture system (FMS). The flexible manufacture system (Flexible Manufacturing System) was later gradually developed in the late 1960s. It's based on digital controlled engine bed processing center controlled by the computer, and it can adapt the automated manufacture system of multi-variety small batch production. One of its major characteristics is that it still has high compatibility without reducing the production efficiency. From the1990s, this idea starts to appear in the domain of the computer software development.

Scholar Mandelbaum thought that the flexibility refers to the effective ability which the system responses to the environmental variation. This definition has explained the flexibility's basic characteristics: (1) The flexibility is a kind of abilities dealing with external environment variation and organization's internal variation; (2) The flexibility is the system's ability of processing environmental variation and (or) the uncertainty caused by the environment; (3) The flexibility is the system's ability effectively processing environmental variation and (or) the uncertainty caused by the environment. Flexible MIS refers to the management information

system which, within limits, can satisfy the enterprise to adapt external environmental variation's demand in the process of information system's programming, developing and working. The initial concept of MIS was to process data from the organization and presents it in thefor of reports at regular intervals. The system was largely capable of handling the data from collection to processing. It was more impersonal, requiring each individual to pick and choose the processed data and use it for his requirements. This concept was further modified when a distinction was made between data and information. The information is a product of an analysis of data. The concept of MIS gives high regard to the individual and his ability to use information. An MIS gives information through data analysis. While analyzing the data, it relies on many academic disciplines. These include the theories, principles and concepts from the Management Science, Psychology and Human Behavior, making the MID more effective and useful. These academic disciplines are used in designing the MIS, evolving the decision support tools for modeling and decision - making.

4.2. The Characteristics of Flexible MIS

The substantive characteristics of flexible MIS are to adequate the variation, namely, meet and satisfy the need of the enterprise's unceasing change in certain scope. This adaptation includes the adaptations of report form, service flow, data construction and business management pattern.

1) The adaptation of report form It's flexible MIS system's basic adaptation function and essential feature to adapt the report form.

2) he adaptation of service flow The enterprise service flow's reorganization and the organization management's transforms can always be met in different stages of the MIS system's programming, developing and working, and the MIS system will inevitably have certain differences with organization's demand in each different stage. Therefore flexible MIS must have strong adaptive ability to the service flow.

3) The adaptation of data construction Data construction is the core of the enterprise information system's data base, it's also the basic frame to maintain the information system's operation structure.

It can guarantee the relative stabilization of the data construction through fine design of data construction and data connection technology, thus it can guarantee its adaptation to the data construction.

4) The adaptation of management pattern

A management information system gives the business managers the information that they need to make decisions. Early business computers were used for simple operations such as tracking inventory, billing, sales, or payroll data, with little detail or structure. Kenneth and Jane Laudon identify five eras of MIS evolution corresponding to the five phases in the development of computing technology: 1) mainframe and minicomputer computing, 2) personal computers, 3) client/server networks, 4) enterprise computing, and 5) cloud computing.

The *first era* (mainframe and minicomputer) was ruled by IBM and their mainframe computers; these computers would often take up whole rooms and require teams to run them - IBM supplied the hardware and the software. As technology advanced, these computers were able to handle greater capacities and therefore reduce their cost. Smaller, more affordable minicomputers allowed larger businesses to run their own computing centers in-house.

The *second era* (personal computer) began in 1965 as microprocessors started to compete with mainframes and minicomputers and accelerated the process of decentralizing computing power from large data centers to smaller offices. In the late 1970s minicomputer technology gave way to personal computers and relatively low cost computers were becoming mass market commodities, allowing businesses to provide their employees access to computing power that ten years before would have cost tens of thousands of dollars. This proliferation of computers created a ready market for interconnecting networks and the popularization of the Internet.

As technological complexity increased and costs decreased, the need to share information within an enterprise also grew—giving rise to the *third era* (client/server), in which computers on a common network access shared information on a server. This lets thousands and even millions of people access data simultaneously. The *fourth era* (enterprise) enabled by high speed networks, tied all aspects of the business enterprise together offering rich information access encompassing the complete management structure.

The *fifth era* (cloud computing) is the latest and employs networking technology to deliver applications as well as data storage independent of the configuration, location or nature of the hardware. This, along with high speed cellphone and wifi networks, led to new levels of mobility

in which managers access the MIS remotely with laptops, tablet PCs, and smartphones.

The terms *Management Information System* (MIS), *information system*, *Enterprise Resource Planning* (ERP), and *information technology management* are often confused. Information systems and MIS are broader categories that include ERP. Information technology management concerns the operation and organization of information technology resources independent of their purpose.

Most management information systems specialize in particular commercial and industrial sectors, aspects of the enterprise, or management substructure.

- *Management information systems (MIS)* produce fixed, regularly scheduled reports based on data extracted and summarized from the firm's underlying transaction processing systems to middle and operational level managers to identify and inform structured and semi-structured decision problems.
- *Decision Support Systems (DSS)* are computer program applications used by middle management to compile information from a wide range of sources to support problem solving and decision making.
- *Executive Information Systems (EIS)* is a reporting tool that provides quick access to summarized reports coming from all company levels and departments such as accounting, human resources and operations.
- *Marketing Information Systems (MIS)* are Management Information Systems designed specifically for managing the marketing aspects of the business.
- *Office Automation Systems (OAS)* support communication and productivity in the enterprise by automating work flow and eliminating bottlenecks. OAS may be implemented at any and all levels of management.
- *School Information Management Systems* (SIMS) covers school administration, and often including teaching and learning materials.
- *Enterprise Resource Planning (ERP)* facilitates the flow of information between all business functions inside the boundaries of the organization and manages the connections to outside stakeholders.

Management Information Systems (MIS) is the study of people, technology, organizations and the relationships among them. MIS professionals help firms realize maximum benefit from investment in personnel, equipment, and business processes. MIS professionals create information systems for data management (i.e., storing, searching and analyzing data). In addition, they manage various information systems to meet the needs of managers, staff and customers. By working collaboratively with various members of their work group, as well as with their customers and clients, MIS professionals are able to play a key role in areas such as information security, integration and exchange. As an MIS major, you will learn to design, implement and use business information systems in innovative ways to increase the effectiveness and efficiency of your company.

5. Relationship between information systems and management accounting

The relationship between information systems and management accounting is bidirectional. Major parts of the research on the relationship are unidirectional and it is expected that the IIS impacts or enables management accounting. Granlund and Malmi (2002) argue that the information systems is more likely to impact management accounting as ERP systems are hard to change once they are configured (Davenport, 1998). That information systems are able to deliver support for management accounting is not a new idea. It is argued, on the other hand, that the first use of information systems was in relation to accounting (Brady et al., 2001; Shields, 2001). Research on management accounting and integrated information systems (IIS) has evolved across a number of different research streams. Some research streams put heavier emphasis on the management accounting side, while other research streams put emphasis on the information systems side. Existing frameworks on management accounting and information systems do not seem to be able to fulfil the primary purpose of a needed framework and still score high on all dimensions of the criteria function. Most management accounting and control frameworks (e.g. those by Flamholtz et al., 1985; Simons, 1995) do not explicitly incorporate IIS. The same is true with regard to frameworks within information systems research (e.g. DeLone and McLean, 2003) as they do not explicitly incorporate management accounting. There are examples of frameworks that deal with a combination of information systems and management accounting. One such framework is

that developed by Mauldin and Ruchala, whose framework is task focused: "A primary result of this paper is the proposition that an AIS research model should be reoriented around a task focus" (1999). This is in harmony with March and Smith, who write that "technologies are often developed in response to specific task requirements using practical reasoning and experiential knowledge" (1995).

The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. In the body the heart plays the role of supplying pure blood to all the elements of the body including the brain. The heart works faster and supplies more blood when needed. It regulates and controls the incoming impure blood, processes it and sends it to the destination in the quantity needed. It fulfills the needs of blood supply to human body in normal course and also in crisis. The MIS plays exactly the same role in the organization. The system ensures that an appropriate data is collected from the various sources, processed, and sent further to all the needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the management functionaries: the managers and the top management.

The MIS plays exactly the same role in the organization. The system ensures that an appropriate data is collected from the various sources, processed, and sent further to all the needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the management functionaries: the managers and the top management. The MIS satisfies the diverse needs through a variety of systems such as Query Systems, Analysis Systems, Modeling Systems and Decision Support Systems the MIS helps in Strategic Planning, Management Control, Operational Control and Transaction Processing. The MIS creates another impact in the organization which relates to the understanding of the business itself. The MIS begins with the definition of a data entity and its attributes. It uses a dictionary if data, entity and attributes, respectively, designed for information generation in the organization. Since all the information system use the dictionary, there is common understanding of terms and terminology in the organization brining clarity in the communication and a similar understanding an even of the organization.

The word information is used commonly in our day to day working. In MIS, information has a precise meaning and it is different from data. The information has a value in decision making while data does not have. Information brings clarity and creates an intelligent human response in the mind. In MIS a clear distinction is made between data and information. Data is like raw materials while the information is equivalent to the finished goods produced after processing the raw material. Information has certain characteristics.

6. Conclusions

Several variables mediate or moderate the relationship between IIS and management accounting. Especially literature within the contingency theory offers several variables, including perceived environmental uncertainty (PEU) (Chong and Chong, 1997), strategy (Gerdin and Greve, 2004), bureaucratisation (Gordon and Miller, 1976), task complexity (van der Veeken and Wouters, 2002) and resources such as the skills of employees (Gordon and Miller, 1976). While contingency variables gain considerable attention in the contingency literature, other streams of research consider contingency or context variables. Management accounting, being comparatively a new discipline, suffers from certain limitations, which limit its effectiveness.

These limitations are as follows: Limitations of basic records: Management accounting derives its information from financial accounting, cost accounting and other records. The strength and weakness of the management accounting, therefore, depends upon the strength and weakness of these basic records. In other words, their limitations are also the limitations of management accounting. Persistent efforts: The conclusions draws by the management accountant are not executed automatically. He has to convince people at all levels. In other words, he must be an efficient salesman in selling his ideas. Management accounting is only a tool: Management accounting cannot replace the management. Management accountant is only an adviser to the management. The decision regarding implementing his advice is to be taken by the management. There is always a temptation to take an easy course of arriving at decision by intuition rather than going by the advice of the management accountant. Wide scope: Management accounting has a very wide scope incorporating many disciplines. It considers both monetary as well as non-monetary factors. This

all brings inexactness and subjectivity in the conclusions obtained through it.

Top-heavy structure: The installation of management accounting system requires heavy costs on account of an elaborate organization and numerous rules and regulations. It can, therefore, be adopted only by big concerns. Opposition to change: Management accounting demands a break away from traditional accounting practices. It calls for a rearrangement of the personnel and their activities, which is generally not like by the people involved. Evolutionary stage: Management accounting is still in its initial stage. It has, therefore, the same impediments as a new discipline will have, e.g., fluidity of concepts, raw techniques and imperfect analytical tools. This all creates doubt about the very utility of management accounting.

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