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The Impact of Management Information Systems on Organizational Performance

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BACKGROUND OF THE STUDY

Business managers today, are much more concerned about the effect of competition than they were even a few years ago (McKenzie, 2021). Maintaining and improving performance in an increasingly complex and competitive global operating environment, where change pressures appear to be the only constant, is a major challenge for any organization (Lonial and Carter, 2015). The importance of information is critical for achieving short, intermediate, and long-term objectives (Riahi et al., 2015). However, it should be noted that not just any information provides a competitive advantage, but information that is timely, relevant, and accurate, which is where management information systems (MIS) come into play (Sousa and Oz, 2015). Deregulation has also increased competitive pressure for organizations to survive, grow and prosper. In such a competitive environment, managers employ a lot of the resources at their disposal as efficiently as possible so as to accomplish the objectives and goals of the enterprise (Ikechukwu et al., 2019).

Statement of the Problem

To address key operational and strategic questions, an effective MIS gathers, organizes, synthesizes, and presents data in a way that addresses internal issues as well as competitive factors. On the other hand, issues with cost cutting, increased inefficiency and production lead time have continued to have an impact on manufacturing companies operational performance.

The effectiveness of MIS in enhancing organizational performance is a critical concern for businesses (Bannerman, 2008; Ra et al., 2009; Nguyen et al., 2016; Marnewick et al., 2017). Despite the extensive research on MIS and organizational performance, there is limited focus on specific industries such as cocoa processing in Ghana. Adeleke et al., (2016) highlight the importance of internal organizational factors in risk management, which can be significantly influenced by the effectiveness of MIS. Moreover, Bharadwaj (2000) emphasizes that IT capabilities, including MIS, are crucial for enhancing firm performance. However, the unique challenges and opportunities within the Ghana Cocoa Processing Company require a targeted investigation to determine how MIS implementation can drive performance improvements. Ahearne et al., (2008) and Delone and McLean (2003) provide frameworks for evaluating the impact of technology on performance, but their applicability to the cocoa processing sector in Ghana remains underexplored.

In the context of the Ghana Cocoa Processing Company (GCPC), there is a need to comprehensively assess how MIS can be leveraged to improve operational efficiency, decision-making processes, and overall performance outcomes. Despite the potential benefits of MIS, there remains a significant gap in understanding its specific impacts within the cocoa processing industry in Ghana. The limited empirical evidence on the subject poses challenges for managers and stakeholders who aim to optimize the use of MIS for competitive advantage. The study seeks to address the gap by investigating the specific impacts of MIS on the performance of the Ghana Cocoa Processing Company, with the goal of providing actionable insights for industry practitioners and policymakers.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Objectives of the Study

The main objective of the study is to examine the impact of management information systems on organizational performance. In light of identifying the problem and its importance, the following specific objectives determine according to the following ways:

1. Evaluate the effectiveness of MIS on decision support system among managers of CMC.
2. Analyse Cocoa Marketing Company's current MIS structure.
3. Assess the differences in the current and desired situation of MIS use in CMC.
4. Examine whether MIS application supports CMC's corporate strategy.

Research Questions

1. What is the effectiveness of MIS on decision support system among managers of CMC?
2. How is the MIS structured in Cocoa Marketing Company?
3. What is the difference between the current and the desired situation of MIS use in Cocoa Marketing Company?
4. Does MIS application supports CMC's corporate strategy?

LITERATURE REVIEW

Introduction

This chapter introduces the literature review which this thesis has its base. More specifically,

this chapter explains the concept of information system and Management information System

and also, the effectiveness factors which are used to study the research questions. Time-saving, workload, and System Reliability are concepts that are introduced and explained how each is linked to information systems and effectiveness. Following the literature study is a short summary. This chapter concludes with an explanation of two different implementation ways.

Conceptual Review

The concept and definition of organizational performance and Management Information Systems (MIS) were discussed in this section.

The Concept and Definition of Organizational Performance

The performance of an organization with respect to its aims and objectives is what Cho and Dansereau (2010) described as organizational performance. In addition, Tomal and Jones (2015) define organizational performance as the difference between the actual and expected outputs of an organization. A company's effectiveness, efficiency, and environmental responsibility are measured by its performance, which is the needed or standard indicator (Wambugu, 2016). Performance refers to the various metrics that show how a particular client request is handled. It also refers to the act of performance, that is, using one's knowledge to do something correctly or efficiently rather than just having it. Performance is the result of every action and strategy taken by a corporation.

The Concept and Definition of Management Information Systems

An acronym comprising the terms management, information, and system is a management information system. One of the main computer-based information systems, the management information system (MIS), attempts to satisfy the general information requirements of all managers inside the company or within a specific organizational division of the company. According to Santos (1991) and Shah (2014), MIS is a planned system for gathering, analyzing, storing, and sharing data in the form of information needed to perform management tasks. It may also take the form of a formal report detailing the planned and executed actions. According to

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Laudon and Laudon (2015), MIS is a tool that helps management give a competitive advantage that must support the objectives of the company.

An integrated manual computer system supporting a company's management operations and decision-making processes is called a management information system. According to Asemi, Safari, and Zavareh (2011), MIS is an organizational technique for delivering projected, historical, and present data regarding internal operations and external intelligence. In addition, it is an integrated group of parts or entities that cooperate to carry out a certain task, aim, or purpose (Okoye, Egbunike & Onyali, 2013). It is therefore a computer-based system that offers data for making decisions about organizing, scheduling, and managing the functioning of the company's subsystem while also creating a synergistic organization.

Objectives and Characteristics of MIS

Using the organizational structure and dynamics of the business to better manage the company for a competitive advantage, as well as supporting executives in making decisions that further the organization's strategy, are the main objectives of a MIS (Yusuf, Sanni & Kazeem 2014). The MIS aims to achieve the following.

Data Capturing: To support decision-making, MIS gathers operational information or data from a variety of internal and external sources inside the company. Computer terminals or manual labour might be used for data collecting (Obasan & Soyebo 2012).

Data processing: Facilitating the collection and processing of data for internal company usage is one of the main objectives of MIS. In addition to automatically gathering data from internal sources like inventory orders and sales transactions, MIS can also interface with external sources like industry databases and market research (Al habri & Sonawane 2015). In order to generate the information required for organizing, coordinating, directing, and regulating tasks as well as strategic, tactical, and operational planning, the acquired data is processed. Data processing include operations including summarizing, sorting, calculating, and categorizing.

Information Storage: For later use, MIS keeps both processed and raw data. Information is kept as an organizational record for future use if it is not needed right away. Information Retrieval: When different users request information, MIS retrieves it from its stores.

Information Distribution: Information, the completed result of Management Information Systems, is distributed to the users inside the organization. It can be completed online using a computer terminal or on a regular basis.

Relationship between MIS and Organisational Performance

MIS is a set of interconnected components that collect, retrieve, store, process and distribute information to support decision making for administrators in the corporate sector (Gupta, 2011). According to AlMamary et al., (2014), MIS is one of the most significant accomplishments in the area of managerial business, which seeks to supply reliable, exact, relevant and complete information to directors towards increasing the organisational performance in firms. Also, MIS assists the functioning and monitoring of a company. Furthermore, it depicts the elements and resources to guarantee the valid functioning of a firm (Munirat et al., 2014). The organisational performance refers to the phenomena of how well enterprises obtain their desired goals (Khalil, Khalil, & Khan, 2019).

According to O'Brien (1998) information systems are important to control performance. It should provide feedback that can be monitored and evaluated to determine whether the system meets specific criteria. A good system is one that is adjustable so that appropriate information is produced and provided to end users. Individual performance measures should be relevant to the organisation's objectives. People and systems should work together to ensure desirable outcomes are achieved. Therefore, information systems form part of

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

an effective performance management (Osodo & Jemaiyo, 2015). Evidence from many case studies suggest that IT increases productivity and performance (Byrd & Marshall, 1997).

Theoretical Review

The study was guided by the resource based theory and the technology adoption model. These theories are discussed as follows

Resource Baed Theory

Edith Penrose's (1959) theory of business growth served as the basis for Resource Based Theory, which was popularized by Jay Barney (1991) and introduced by Birger Wernerfelt (1984). The resource-based view holds that businesses have resources, some of which provide them a competitive edge and some of which improve their long-term success (Barney 1991; Wade & Hulland 2014). A company's resources are the cornerstone of its survival and prosperity. Resources, both material and human, could be employed. Resources and capabilities need to be distinguished when evaluating a company's resources. Resources are considered the basic unit of analysis and are inputs into the production process (Gupta et al., 2018). A company's resources can include things like finance, information systems, capital equipment, patents, brand names, personnel skill, and so forth. Fewer resources produce results on their own (Ravichandran, Lertwongsatien & Lertwongsatien 2014).

The ability or capacity of a resource team to carry out a particular activity or task is known as its capability, whereas every productive activity requires the coordination and cooperation of resource teams. Thus, the origins of a particular firm's capability are its resources (Grant, 2001). Information systems are internal firm resources, according to Gupta et al., (2018), because businesses own and control the acquisition, integration, and use of their interconnected components, whether through access (such as leases or subscriptions), progressive ownership (such as hire purchase), or total ownership. The RBV has been used in empirical studies of firm performance to identify variations across enterprises in the same industry as well as between industries (Hansen & Wernerfelt 1989). but even inside the more constrained boundaries of industries' groups (Cool & Schendel 1988). This implies that there may be substantial effects on performance from individual, firm-specific resources (Mahoney & Pandian 1992).

Resource-based theory is applied here to incorporate business managers' cognitive abilities to assure successful decision-making and, eventually, drive organizational performance. It can be inferred from this that Cocoa Marketing Company possesses resources tailored to each individual that both enable and guarantee the identification of fresh opportunities, efficient resource acquisition, and an efficient mindset towards managing all tasks. Additionally, the company seeks and demands information that aids in problem solving, decision making, strategic planning, and management control. Information about those matters needs to be relevant, timely, and accurate in order for it to be useful (Laudon & Laudon 2015). MIS is an integrated collection of tools that cooperate to carry out a particular task, aim, or objective. This computer-based system offers data to support decision-making related to scheduling, arranging, and managing the functioning of the company's subsystem while also fostering synergistic organization (Shah 2014).

Empirical Review

The study by Kehinde and Yusuf., (2012) investigated the role of MIS as a catalyst to organisational performance in the 21st century. A structured questionnaire was distributed to 60 selected employees of three selected Banks in Nigeria including the Intercontinental Bank for purpose of analysing the collected data, using the descriptive and regression method of statistical analysis. The outcome of MIS is very important to an organisation because no organisation can survive, expand and attain significant development without information particularly in the banking sectors in the 21st Century.

The study by Al-Mamary, Shamsuddin and Aziati, (2015) tried to focus intensely on the factors that led to the successful adoption of MIS in Yemeni firms. This study examines the relationship between MIS which involves technological factors (system quality, information quality, and service quality), organisational factors

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

(top management support, and user training), and people factors (computer self-efficacy, and user experience) with organisational performance at Sabafon Company in Yemen. The study focused on people who are constantly related with MIS in their business. This study revealed that there is a significantly linked relationship between system quality, information quality, service quality, top management support, user training, computer self-efficacy, and user experience with organisational performance.

Marire (2018) looked into the role management information systems play in Nigeria University paperwork and service delivery. For the study, a sample of 332 respondents was taken. The Z-test and the chi-square statistical approach were used to analyze the data. The outcome showed that the management information system had greatly aided in the provision of services. The investigation also discovered that a management information system had played a significant role in the overall decrease in paperwork. The study comes to the conclusion that one of the main obstacles to the effective administration of Nigerian institutions is a deficient management information system.

Owino and Jemaiyo (2015) looked into the connection between Kenindia Assurance Company Limited employees' job performance and their use of management information systems. For the study, a sample of 300 branch managers, underwriting officers, claims and legal managers, IT managers, and operations managers were taken. The data was analyzed using an ordinal scale. The results of the study showed that using MIS has improved employee satisfaction and resource access. According to the study's findings, employees who believe the new IS is out to get them are more likely to experience fear and anxiety. This is also linked to staff members' misunderstanding of IS's roles and responsibilities.

Conceptual Review

The conceptual framework that guides the study is presented in Figure 2.1. The conceptual framework shows the dependent variable (organizational performance) and independent variables (MIS quality, perceived usefulness of MIS and decision making). The concept of MIS gives high regard to the individual and his ability to use the information. MIS gives information through data analysis. While analyzing the information, it relies on many academic disciplines like management science, OR, organization behavior, psychology, etc. The foundation of MIS is the principles of management and its practices. MIS uses the concept of management control in its design and relies heavily on the fact that the decision maker is a human being and is a human processor of information. A MIS can be evolved for a specific objective it is evolved after systematic planning and design. It calls for an analysis of business, management views and policies, organization culture and the management style. The MIS offers solutions to handle complex situations of the input and output flows. it uses theory of communication which helps to evolve a system design capable of handling data inputs, process, the outputs with the least possible noise or distortion in transmitting the information from a source to destination.

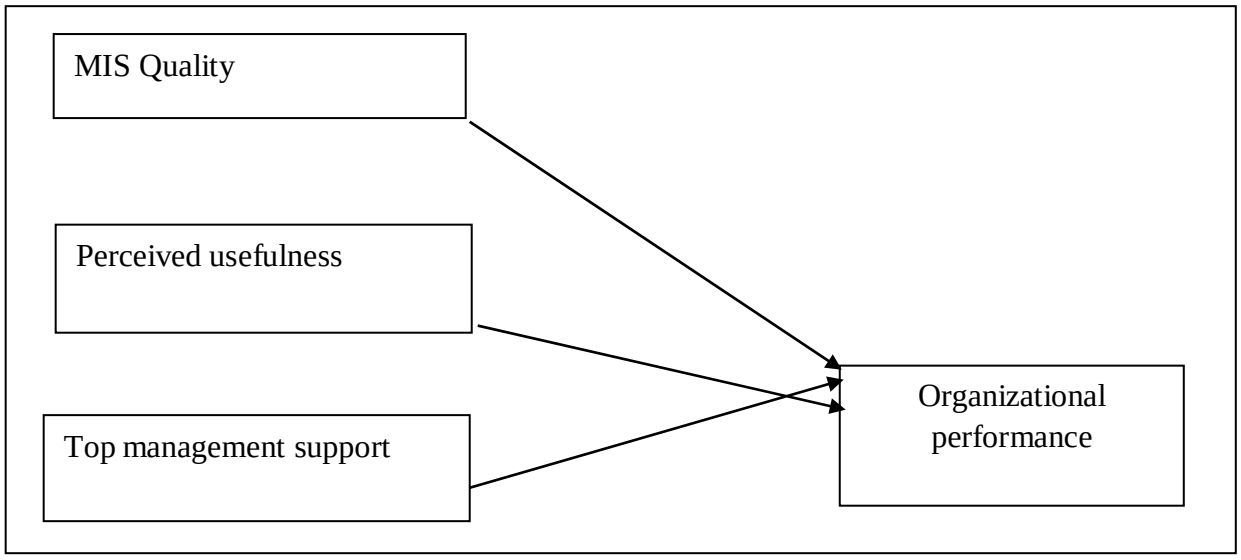

Figure 2.1: Conceptual Framework of MIS

Source: Researcher construct, (2024)

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

RESEARCH METHODOLOGY

Research Design

The goal of research might be exploratory, descriptive, or explanatory (Kowalczyk, 2019). Exploratory studies are typically conducted to learn more about new regions or themes. This is done to make the process of developing a research topic easier. Exploratory studies are usually used to look into difficulties or themes that are not well known, and they're a flexible way of studying difficult-to-measure phenomena (Alam, 2002). According to Peshkin (1993), descriptive research entails a description of the phenomena of interest. There is no investigation of causal links, and it is most commonly employed when the topic has a clear structure, and the researcher understands exactly what he or she wants to look at. The goal of descriptive research is to provide a detailed portrait of people, events, or circumstances.

Explanatory research, according to Blatter and Haverland (2012), includes both a description of the link between distinct phenomena or variables and an assessment of the causal relation between them. Statistical tests are used to explain the relationship between variables using data obtained. This sort of study, according to Kowalczyk (2019), is used to explain variable features and draw generalizations based on the link. Explanatory research is the best fit for this study, given the justifications of the goal. The goal of this research was to model the link between supply chain integration and operational performance. This research, like any other explanatory study, is based on assumptions, which are frequently concerned with the frequency of occurrence of two or more variables. To analyse the data obtained, statistical tests were used.

Population

The main data collection instruments used for the study was a structured interviews guide. The questions on the interview guide were structured with both open and closed questions. The open questions allow respondents to give answers in their own way whereas the closed questions provide a number of alternative answers from which the respondent is instructed to choose. The latter type of questions was used in a section of the interview guide for management since it is usually quicker and easier to answer, as they require minimal writing. Reponses are also easier to compare as they are predetermined.

The interviews were used because the self-administered questionnaires risked producing limited scope of answers to questions, especially in cases of structured questions. The interview was designed so that the respondents would be free to bring up issues they felt would be of interest to the subject, as a result a “discussion-friendly” atmosphere in which one was able to ask follow-up questions was created. The questions on the interview guide were formulated with the objectives of the study in mind. For instance, to determine the informational needs of management, respondents were asked to provide decisions that are impossible to make without (the right) information.

Sampling Strategy

The study made use of descriptive survey research designs and a gap analysis. The research objectives for this study were formulated based on the steps that would be taken in order to resolve the problem statement as formulated. Using a gap analysis, the information requirements of Management of the company were first analyzed, followed by an analysis of the current management information system in the light of the information needs. Finally, an analysis of the difference between the current and desired situation were made based on the results of the gap analysis, and recommendations made on how to diminish this gap and make the MIS in place robust. The MoSCoW framework was used for prioritizing areas of MIS that Management want improved.

Study Population

The population of the study is made up of the Management of the company. The company employs over 653 employees managed by 14 managers. The management of the company includes 3 Senior Managers and 11 Managers that make up the management board, 3 Divisional Heads and 17 Unit Heads.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Determination of Sample Size and Sampling Technique

The total sample for this study was 30. They included the Head of MIS, 10 members of the management board, 9 Divisional Heads and 10 Unit Heads. The nature of the study necessitated the use of the purposive sampling technique for selecting respondents. The purposive sampling technique was used to sample the fifteen respondents from the management, divisional and unit heads of the company. The purposive sampling technique involves selecting a sample in accordance with the aim the researcher seeks to attain. This sampling technique was used because specific members of management that makes extensive use of information provided by the MIS unit needed to be selected for the study. In addition, the head of MIS for instance had to be sampled for this study to respond to certain questions that pertain to the current MIS of the company thus, the use of purposive sampling technique. The seven heads of unit were selected using the simple random technique. The list of heads of units was obtained from the human resource department. Using the picking without replacement seven heads of units were selected from the list of heads of units.

Data Collection Methods

Exhaustive interview sections using a structured interview guide were used for the data collection. Conducting interviews represents one of the essential sources of gathering information for any case study. The kind of interviews used in this study a semi-structured interview. This form of interview is mix of more or less structured questions which guided the issues to be explored. This was the nature of the interviews of the management. The interviews were scheduled by the respondents and it was carried out in the comfort of the respondents' offices. All the responses were written down by the interviewer. Some of the questions were repeated to be sure of the consistency and reliability of answers obtained. The data collection was done within a period of 8 weeks.

Data Analysis

Tools from Statistical Package for Social Sciences software and Microsoft Excel were used in the analysis of the quantitative data obtained from management. The questionnaires were coded by assigning unique numbers to the questions and each response. The SPSS worksheet was designed based on the coded questionnaire. The data was then entered into the worksheet, based on these codes, and then subjected to statistical analysis to provide the information needed for discussion. The qualitative data were summarized in formats that made it easy to be incorporated into the findings of the study.

DATA ANALYSIS, RESULTS AND DISCUSSION

Introduction

In this chapter the data analysis, results and discussion conducted were discussed in this study.

Effectiveness of MIS on Decision Support System of Managers and Departments

To support decision-making, monitor operations and measure how well a department or unit is performing, different departments require different data and reports. The data and report requirements vary from department to department as well as the frequency that these reports must be made available. Some data, particularly detailed data on tonnage of shipment, invoice of shipped cocoa beans and the documentation on shipment, is required daily. Shipping and Logistics department for instance requires a daily overview of the tonnage of cocoa beans shipped and the documentation of all vessels undertaking the shipment. This enables the department to track the progress of all consignment shipped, the destination points and arrival dates. This enables them provide the customers that would receive the shipment all relevant information covering the shipment.

It must however be emphasised that the informational needs of managers of CMC is influenced by the level that the manager occupies in the organisational structure, the higher the manager, the higher the level of

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

information. Middle management requires reports on the performance of their department whereas information requested by senior management is mostly on the company level performance.

Current MIS Structure of Cocoa Marketing Company

The analysis of the current management information system was done with respect to the reports being produced, the structure of the MIS function and the role of MIS personnel in providing timely and accurate reports. This section of the study mainly involved inventorying with management what kind of reports they currently receive, and finding out from the MIS unit the process and procedures they go through in coming up with those reports.

Through the interview sections with Management and head of MIS, it became known that most of the information/data required by management were always available, but it takes a long time to produce, because of the manual way of creating this management information. The time lapse between the date of activity and the date of reporting makes the information a lot less valuable. This directly shows that one of the lapses in the existing MIS of CMC is lack of communication between departments. Although the reports of one department are used by several departments within the company, it takes a long period for other departments to have the information although it may be available some few days after carrying out the activity.

Another option of assessing the current MIS function was in terms of their output or reports that they present to Management. Management of the various departments involved in the study were asked to rate the reports of the MIS department in terms of accuracy, completeness, validity, timeliness and accessibility and the results are presented in Table 4.1 to Table 4.5.

Table 4.1Accuracy of MIS reports

	Frequency	**Percent**
Accurate	20	68.97
Moderate	4	13.79
Contains errors	5	17.24
Totals	30	100

Source: Field Data, 2022

The reports of the MIS department can be termed fairly accurate based on the ratings given them by management as shown in Table 1. Three management members was of the view that the reports received from the MIS unit contains some errors while the remaining claimed the reports were moderately accurate or accurate. This means that management to a certain extent can rely on the reports of MIS to take strategic decisions that affect the company. The same thing however, cannot be said of the MIS reports in terms of completeness. Most management members interviewed constituting 60 percent of the respondents as shown in Table 2 asserted that the reports they received are sometimes or never complete.

Table 4.2 Completeness of Mis Reports

	Frequency	**Percent**
Most of the Time	12	40.00
Sometimes	3	10.00
Never	15	50.00
Totals	30	100.00

Source: Field Data, 2022

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

In reacting to this assertion of other managers, the head of MIS claimed one of the major challenges they faced in producing complete reports is the scattered nature of the data. He added that most of the warehouses for instance are scattered across the length and breadth of the country and one needs to collate data from all these sources to provide a consolidated report. Furthermore, some of the data at the time that these managers request for the information are not available and they always ensure that the absence of these data is captured in their reports. He however, stated that all these reports are updated within the month when all the relevant data becomes available. In terms of validity, that is whether report values fall within defined ranges, majority of the managers (76.67%) were of the view that the reports are valid most of the time.

Table 4.3 Validity of MIS reports

	Frequency	**Percent**
Most of the Time	23	76.67
Sometimes	7	23.33
Totals	30	100.00

Source: Field Data, 2022

Whereas 76.67% of the managers were of the view that the data and values in the reports are sometimes within range, none of the managers claimed the values are never valid. This means that should the MIS unit be able to clear the hurdle of incomplete data within the reports, most of the information they provide to management can be used perfectly for decision making since the current data that they are able to obtain are usually accurate and valid.

Table 4.4 Timeliness of MIS reports

	Frequency	**Percent**
Sometimes	19	63.33
Never	11	36.67
Totals	30	100.00

Source: Field Data, 2022

The responses of management indicated that one of the quality dimensions of information, that is timely information is not being met in the current situation. As many as 63.33 percent of management interviewed claimed the information or reports that they receive from MIS department is never received on time. Three of the managers were of the opinion that MIS sometimes provides information or reports on time. This was corroborated by the head of MIS as he cited late reporting as one of the challenges facing the unit. He asserted that the current management reporting requires manual intervention and as such, information is not available "on demand".

Table 4.5 Accessibility of MIS reports

	Frequency	**Percent**
Most of the Time	19	63.33
Sometimes	11	36.67
Totals	30	100.00

Source: Field Data, 2022

The last attribute of a good MIS system as assessed in the case of the current MIS of the company was the accessibility of MIS reports and information. As shown in Table 4.5, Most of the managers making up of 63.33

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

percent of those interviewed stated that the information and reports of the company's MIS is accessible. They were of the view that once the report is produced by the MIS department, it is made available to all managers and officers that need to take decision based on the content of the reports. The only drawback and the reason why three managers cited the reports as not accessible is the fact that most of the reports and information produced are located on different network drives and external data storage devices of the departments that relies most on the information for decision-making. This sometimes makes it difficult to retrieve information on network drives of other departments since you always need someone within that department to assist you locate the file or reports.

The main task of the MIS team is to prepare management reports on the operations of CMC. The MIS unit also supports other departments in their information requirements. According to the head of MIS, this does not work efficiently, mainly because most departments have their own members making some management reports of a sort, which absorbs time they could have spent on their actual tasks.

The current process of obtaining information for the preparation of management reports is semi-automated. There is computerised management information system that is augmented with manual interventions to produce the needed reports. Systems are not linked to each other, which leads to data inconsistency and data redundancy. The processes in the MIS unit are structured. Every month they make the same reports and they do that in the same way. Their starting point for these reports is the output from CMC's computerised system for warehousing and shipment of cocoa beans. This data is automatically generated at month end and therefore available on day one of the next month. The outputs are two spreadsheets with data on daily warehousing tonnage and the other on daily transfer from warehouse for shipment. These are spreadsheets files with thousands of lines of information spread over about a dozen of columns. The remaining information is provided by people in different departments, like the shipping and warehouse and port operations, finance in MS Excel sheets. This information is received in the first week of the next month. All this information is transformed into the same format in spreadsheets.

After all information is adjusted and manipulated in Excel, with the use of pivot tables, the relevant information is sorted out and transformed into reports. This process takes more than a week sometimes since all warehouses scattered across the country must confirm their data. Moreover, at the head office in Accra, all the results of all locations have to be consolidated. Until all locations have finished this manual process, there is no insight in the exact consolidated operational results for the previous month. It takes almost three weeks for all the reports of the operational results for the previous month to be completed. The final reports made available to Management are spreadsheet based and provided to them in both soft and hardcopy. All reports are stored on local drives or shared network drives not in databases. Therefore, all historical data is captured in different spreadsheet documents. This makes it almost impossible to retrieve historical data, and data is only available in the format where it was made available.

Differences in the Current and Desired Situation of MIS Use in CMC

An analysis was undertaken by comparing the current situation with the desired situation according to the formulated criteria, and defining what kind of improvement is required. The gap between the current use of systems and the required use of systems is a little wide. It can be inferred from the interaction with management and the head of MIS that most of the requirements are not being met, because of the manner in which data in the company is being stored and retrieved. As discussed in the current MIS section of the study, the main problem is the time it takes to get the required data, which is much longer than required. Most data is available in one way or another, but it takes a lot of time and effort to obtain it. This is obviously because of the large share of human participation in the process of management reporting.

The desired situation of every MIS involves employees spending more time on analyzing data, rather than on producing it. Currently a lot of time is absorbed by retrieving data from all the various system but with a well-designed MIS structure, all this data is in one place. To retrieve it, people have to run queries or use specialized software. The human involvement in the process cannot be totally shelved since not all requirements can be incorporated in systems, so their relevant data is inputted into the database. Since not all data comes directly from the systems, manual input is still required are still reports that have to be made on an

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

ad-hoc basis. People have to make sure that all relevant data is inputted into the database. Since not all data comes directly from the systems, manual input is still required.

Integrating MIS in the Corporate Strategy of the Company

The role that information plays in terms of corporate planning cannot be downplayed and as such management of the various departments was asked about the nature and information requirements of their departments in terms of strategic planning. The information ranged from an annual overview of total purchased or warehoused cocoa beans to total shipment in terms of tonnage. Whereas some managers required information that is disaggregated on monthly basis and indicating the variances with budgeted figures others only required the actual. In terms of strategic planning, the WPO department for instance required information on the monthly analysis of the tonnage at the various warehouses of the company. They further required this information to be broken down into the various grades of beans that were received at these warehouses. The head asserted that the MIS unit to a certain extent is able to fulfill some of their information requirements. For instance, they are able to provide them at the company level with the total tonnage of beans that was received into all warehouses of the company on an annual basis. This information is usually compared with the budgeted figures at the beginning of the year to determine how well the department has performed in terms of achieving the targets set for them by the senior management of the company. The above situation is not synonymous with the WPO only.

The Shipping department also received similar information on total shipment which gives an insight into expected revenue for the year by the Finance department. The only drawback is that most of these departments put these information together using officers within the department although MIS department could have provided these information in a single report thereby reducing the time and effort in producing this information as well as the data redundancy that emanates from duplication and replication of the same reports. In terms of the role that MIS plays in the corporate planning and strategy of the company, it can be inferred from the interview sections with Management that the output of the MIS unit is inadequate for the purpose of corporate and strategic planning process. Only a small percentage of the information that Management claim they required for corporate planning and strategy were being produced by the MIS unit. In reaction to this, the head of MIS was of the view that most of the information management requires can be produced but these information requirements are not well communicated to the officers hence their inability to provide the required reports.

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

Introduction

This final chapter of the study provides a summary of the entire study. The summary of the major findings as well as the conclusions that can be drawn from these findings are presented in this chapter. It concludes with a recommendation to the MIS unit, management and policy makers. The main objective of this study was to evaluate the current MIS of CMC, recommend ways of improving it and examine the prospects of integrating MIS in the corporate strategy of the company.

The study design used was a combination of descriptive research design augmented by a gap analysis. In all fifteen members of management, heads of units of the company and the head of MIS was selected using the purposive sampling technique to participate in this study. The main research instrument used was the structured interview guide and the information obtained used in the discussion of chapter Four.

Summary of Findings

The first objective of the study sought to define the information requirements of managers and departments of the company. The key findings from this are that: 1. Based on KPI's, each manager and department required different information that they could use to assess how well they are performing as well as make vital decisions for the long-term survival of the company; and 2. Whereas the finance department required data in monetary terms such as total revenue aggregated monthly, operation departments like shipping and logistics as

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well as WPO required data on tonnage of shipment and vessels being used for shipment. The second objective involved analysing the current MIS situation of the company in terms of report quality, personnel and structure. The emergent issues are that:

1. Most of the information/data required by Management were always available, but it takes a long time to produce, because of the manual way of creating this management information. The time lapse between the date of activity and the date of reporting makes the information a lot less valuable;
2. the reports and data produced by the MIS unit are fairly accurate and as such Management can rely on it to make strategic corporate decisions;
3. MIS reports are sometimes or never completed and this is because information needs to be collated from different departments of the company, and this collation is usually not complete when Management request for this information;
4. most of the data or reports produced by the current MIS is valid or within range and should the MIS department be able to clear the hurdle of incomplete data, most of their reports could be the basis of strategic decisions;
5. the dimension of data quality that the current MIS lacks most is timeliness of reports. Most of the reports are not produced on time;
6. the reports of MIS are mostly accessible to all managers although retrieval is quite cumbersome due to the location of these reports; and
7. each department have individuals producing reports for that department only although there is an MIS unit within the company and this increase the spate of data redundancy within CMC.

Examining the prospects of integrating MIS in the corporate strategy of the company was the last objective. The issues that emerged from this objective included the following, that:

1. MIS can help in corporate planning functions like budgeting and variance analysis since all the information required for such activity can be produced by the MIS of the company;
2. The current information produced by the MIS department is inadequate in addressing the information needs of managers and departments for the purpose corporate planning.

Conclusion

With respect to the first objective of the study, it is concluded that different managers of the various departments have different KPIs and therefore different end-requirements. The basic though, is quite similar. Almost everything required revolves around the storage, shipment, and sale of cocoa beans. Whereas the finance department concerns itself with information on invoices of shipped products, the shipping as well as the WPO departments requires information on volumes of products received, the volumes shipped to the destinations, vessels used and the documentation covering the ports and customers that would receive the consignments.

Assessing the current MIS of the company, it can be concluded that most data manipulation is done in MS Excel and most individual files are stored on (network) drives. Further, all departments have their own files, often with duplicate data (data redundancy) which leads to data inconsistency. Management of the company is not getting timely reports which negatively influence decision-making. In terms of consistency, the structure of data and relationships is not consistent across departments and locations although almost all required data is available it is very time-consuming to retrieve them this affects the completeness of reports. Data is not directly accessible by Management, since it is stored as individual files and not stored in a database. Everything has to be requested from employees and they have to provide it to Management. It can also be inferred that there is a gap between the current MIS of the company and the desired situation as attested to by Management.

All management members attested to the fact that timeliness is ‘a must have’ feature of the reports they receive but it takes a lot of time and effort to obtain because of the large share of human participation in the process of management reporting. Although the desired situation of most MIS involves employees spending more time on analyzing data, rather than on producing it, most of the MIS time in CMC is spent on the retrieval and

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consolidation of data from different departments leaving less time for analysis and management reporting. The company has not fully explored the benefits that MIS can provide in terms of corporate planning. Interaction with management indicated that managements on year by year basis have to collate information in times of budgeting for instance.

Recommendations

Based on the summary of findings and conclusions, the following recommendations are made for CMC management's consideration. Management should:

1. Change the current data storage and retrieval system of the company. The current storage of data in different locations and in separate files needs to be changed to a database management system (DBMS). A database centralizes the data and controls redundant data. Rather than storing data in separate files for each application, data are stored as to appear to users as being stored in only one location. This can be as simple as an MS Access database, or as complicated as a full data warehouse. Historical data will be easily accessible, which allows comparison, trend analysis and progress tracking.
2. reduce the data redundancy within the company by instructing each department to cease the production of their own reports. To prevent data redundancy and inconsistency all data needs to be centrally stored and maintained by the MIS team. Current management reporting by people from other departments needs to cease. This also prevents duplicate work and thus waste of time. Moreover, the reliability of the data will increase when an independent team reports them, rather than people whose performance is measured based on the data producing them.
3. Communicate their information requirements in terms of corporate planning, specifying the details and aggregation needed. This would go a long way to ensure that the MIS unit produces reports for Management they would be effectively used in the corporate planning process.

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