

Evaluation of Efficiency of Accounting Information Systems: A Study on Mobile Telecommunication Companies in Bangladesh

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ABSTRACT

The study evaluates the efficiency of Accounting Information Systems of the selected mobile telecommunication companies. The existing Accounting Information Systems which provide important sources of accounting information is viewed in the selected mobile telecommunication companies, more as the system for recording and reporting the business operations than as an information system for management decision making. Accounting Information Systems as a set of capital and human resources within an organization is responsible for the preparation of financial information and also of the information obtained from the collection and process of transaction data. The adequate accounting information is essential for taking every effective decision making process and adequate information is possible if the Accounting Information Systems run with efficiently. The efficient Accounting Information Systems is essential because it ensures that all levels of management get sufficient, adequate, relevant and true information for planning and controlling activities of the business organization. Accounting Information Systems cover a broad area in corporate world and produce quality information for the internal and external users to the business organization. The users of the Accounting Information Systems are satisfied about their systems. The study shows that the Accounting Information Systems of the selected mobile telecommunication companies are efficient since the examination of various indicators of efficiency showed favorable results and the responses of the surveyed respondents showed positive comments.

JEL Classification Code: M41; D61

INTRODUCTION

Accounting Information System is a system that collects and processes data which is measured in terms of money. AIS process accounting transactions and supplies information for the interested users which is used to take effective decision making process, to help management for performing business activities properly and finally to measure the performance of the company. AIS are the oldest and most wide used information systems in business. AIS are based on the double entry bookkeeping concept and other more recent accounting concepts such as responsibility accounting and activity based costing. Accounting is primarily concerned with the design of the system of records, the preparation of reports based on the recorded data, and the interpretation of the reports to the both internal and external users for making decision. Accounting system is a recording process system like journal, ledger, worksheet, trial balance and procedures that are produced reliable and relevant information

for preparing the financial statements and other accounting reports for the satisfaction of the different users to effective decision making. Modern world is the information world and every business organization makes it necessary to obtain proper information both for external and internal users for appropriate decision making. AIS are a combination of the study and practice of accounting with the design, implementation and monitoring of information systems. Accounting Information Systems of the mobile telecommunication companies in Bangladesh have computerized accounting systems. There are three phases like analysis, design and implementation. Successful system design depends to a large extent upon the creativity, imagination, and general capabilities of the designer, observance of the broad principles. The accounting system is an integral part of the internal control structure of an organization. Without the information generated by the AIS, management would lack the ability to plan and direct operations in achieving organizational goals. Although the availability of computer has made computerized processing of accounting data affordable to any organization, a thorough understanding of manual accounting system is essential. All computerized accounting systems include the concepts and principles inherent in a manual system; an understanding of a manual system allows managers to recognize more clearly the interrelationships which exist within accounting data and reports which are produced by Accounting Information Systems of the companies (Fess and Warren, 1990).

Accounting information is economic information; it relates to the financial or economic activities of the business organization. AIS have to monitor the monetary dimension of economic activity in an organization by processing data according to requirements and delivering precise information that is useful to those who plan and manage the organizations activities and also to interested outsiders (Summers, 1989). AIS is vital to all organizations and perhaps, every organization either profit or non profit-oriented need to maintain the AIS and indicate an integrated framework within an entity that employs physical resources to transform economic data into financial information for conducting the firms operations and activities and providing information concerning the entity to a variety of interested users (Sori, 2009). An information system is an organized means of collecting, entering, and processing data and storing, managing, controlling, and reporting information so that an organization can achieve its objectives and goals. AIS are an information system that is designed to make the accomplishment of accounting function possible. AIS processes data and transaction to provide users with the information they need to plan, control, and operate their business (Romney et. al., 1997). Accounting information generated from an accounting information system can be effective in decision-making process, purchase; installation and usage of such a system are beneficial when the benefits exceed its costs. Effectiveness of Accounting Information Systems can be analyzed on three bases such as information scope, timeliness and aggregation. Information scope is considered as financial and non-financial information, internal and external information that is useful in prediction of future events. Timeliness quality is related to the ability of AIS to satisfy information needs by providing systematic reports to the user. Aggregation of information is considered as means of collecting and summarizing information within a given time period (Sajady et. al., 2008). The Accounting Information System is a component of administrative management in business organizations, which handles the collection, tabulation, data processing, financial information communicating and the amount needed to make decisions to users. This system provides accounting information on time to assist in preparing, monitoring and implementing the state budget. It also help in making decisions related to financing lending, making state financial policies, that means Accounting Information Systems serve the government administration in planning control and decision-

making (Al-kasswna, 2012). Wilkinson noted that effective AIS perform several key functions throughout these various stages such as data collection, data maintenance, data management, data control and information generation. The main function of AIS of the selected companies is to analyze the past, present and future economics events and its produces the financial statements namely income statement, balance sheet, owner's equity statement and cash flow statement. Each statement is prepared according to Generally Accepted Accounting Principle, International Accounting Standards, International Financial Reporting Standards, Bangladesh Accounting Standards as adopted by ICAB, the Companies Act 1994, the Securities and Exchange Rules, Income Tax Ordinance and others applicable rules. In order to measure the efficiency of Accounting Information Systems of the selected companies we have analyzed some indicators of efficiency of Accounting Information Systems such as effective internal control systems, security measures, good documentation, separation of operation from accounting, adequate disclosure, cost effectiveness and independent internal and external audit if the aforesaid indicators are prevalent in any Accounting Information Systems then we can comment that the Accounting Information Systems to be efficient. Before analyzing the vagarious indicators at first we have analyzed the opinions of the respondents regarding the various indicators to judge the efficiency of Accounting Information Systems of the selected companies and the opinions are given in the following table:

Table # 1: Table showing the opinions of the respondents regarding the various indicators to judge the efficiency of AIS of the selected companies

Items	CA		CMA		Tin A		Total	
	No	%	No	%	No	%	No	%
1. Effective Internal Control Systems	24	95	22	88	23	92	69	92.00
2. Effective Security Measures	14	56	16	64	18	72	48	64.00
3. Good Documentation	15	60	18	72	18	70	51	68.00
4. Separation of Operation from Accounting	13	52	16	64	18	72	47	62.67
5. Adequate Disclosure	20	80	21	84	19	76	60	80.00
6. Cost Effectiveness	15	60	19	76	13	52	47	62.67
7. Independent Internal and External Audit	19	76	21	82.0	20	80	60	80.00
8. All of the above items	08	32	13	52	10	40	31	41.33
Total	25		25		25		75	

(Source: Opinion Survey Reports)

* The responses of 25 respondents regarding items (1 to 8) are overlapping

Table # 1 shows that 92.00% of the respondents have opined that the effective internal control systems, 64.00% of the respondents have opined that the effective security measures, 68.00% of the respondents have opined that the good documentation, 62.67% of the respondents have opined that the separation of operation from accounting, 80.00% of the respondents have opined that the adequate disclosure, 62.67% of the respondents have opined that the cost effectiveness, 80.00% of the respondents have opined that the independent internal and external audit and 41.33% of the respondents have opined that all alternatives. The majority respondents have opined that the effective internal control systems as an indicators to judge the efficiency of AIS of the selected mobile telecommunication companies.

OBJECTIVE OF THE STUDY

The main objective of the study is to evaluate the efficiency of Accounting Information Systems of the selected companies in Bangladesh. For analyzing this objective researcher has selected and analyzed some indicators of efficiency of AIS such as existence of effective internal control system, cost effectiveness, existence of security measure, good documentation, separation of operation and accounting, adequate of disclosure and independent of internal and external audit. If the aforesaid indicators are prevalent in any Accounting Information Systems then it's to be efficient.

METHODOLOGY OF THE STUDY

Research methodology is a way to systematically solve the research problem. A scientific approach to the research methodology is very much essential to evaluate the research problem systematically. The aim of research methodology is to set up the foundation of the statistical analysis. Researcher has selected two mobile telecommunication companies out of six mobile telecommunication companies in Bangladesh for the research study such as Grameenphone Ltd. (here in after Company # 1) and Teletalk Bangladesh Limited (here in after Company # 2). The research study covers during the years from 2007-08 to 2011-2012. The present study is based on both primary data, second data and opinion survey. Researcher has collected opinion from the respondents group such as Chartered Accountants (CA), Cost and Management Accountants (CMA) Teacher in Accounting and Security Consultants (SC). Researcher also collected the opinions of the companies' executives of the selected companies. Researcher has selected 25 Chartered Accountants, 25 Cost and Management Accountants, 25 Teachers in Accounting and 25 Security Consultants. Researcher used chi square test for analyzing the opinions of the respondents regarding the adequacy of accounting information produced by Accounting Information Systems of the selected companies in Bangladesh. Researcher also used average, standard deviation, coefficient of variation and t-test. The chi-square test is an important test amongst the several tests of significance developed by statisticians. The symbol of Chi-square is χ^2 . Chi-square test is based on chi-square distribution and is used for comparing a selected variance to a theoretical population variance.

$$\chi^2 = \sum \frac{(f_0 - f_e)^2}{f_e}$$

Where, χ^2 = Chi-square (Chi is a Greek letter)

f_0 = Observed Frequency

f_e = Expected Frequency

Calculation of Expected Frequency is as follows:

$$f_e = \frac{RT \times CT}{n}$$

f_e = Expected Frequency in a given cell

RT = Row total for the row containing that cell

CT = Column total for the column containing that cell

n = Total number of observations

T-test is based on t-distribution and is considered an appropriate test for judging the significance of a sample mean or for judging the significance of difference between the means of face samples in case of small samples when population variance is not known. It is the technique to test the hypotheses about the mean of a normal population whose standard deviation is unknown. The formula of t-test is given below:

$$t = \frac{\bar{X} - \mu}{S_e} \quad \text{Where,} \quad \bar{X} = \text{Population mean}$$

μ = Sample mean

S_e = Standard error of the mean

ANALYSES AND FINDINGS

Internal Control Systems:

The Modern information age is fully dependent upon AIS but it has grown increasingly more complex and dependent on technology to meet our needs of information. This complexity and importance of AIS makes it necessary for business organizations to ensure their adequate control over their existing AIS. In different times, the business organization performs examinations of the system to ensure the adequacy of the control and its proper function. Actually control is the process of exercising influence over the activities of an object, organism or system. AIS involve processing of transactions as a means of maintaining financial records. Such systems identify, assemble, analyze, classify, record, summarize and report transactions and other events. Internal controls include all the policies and procedures adopted by the management of an entity to assist in achieving management's objective of ensuring, as far as practicable, the orderly and efficient conduct of its business, including adherence to management policies, the safeguarding of assets, the prevention and detection of fraud and error, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information. Internal Control is a process, affected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives three categories like reliability of financial reporting, compliance with applicable laws and regulations and effectiveness and efficiency of operations. Effective internal control systems are essential for successful operation of business as well as accounting control and administrative control. It helps the Accounting Information Systems division to generate reliable and relevant information. Other qualitative characteristics of accounting information can also be maintained if there is sound internal control system in an organization. Internal controls are procedures to set up to protect assets, ensure reliable accounting reports, promote efficiency and encourage adherence to company policies. Internal controls are essential to achieve some objectives like efficient and orderly conduct of accounting transactions, safeguarding the assets in adherence to management policy, prevention of error and detection of error, prevention of fraud and detection of fraud and ensuring accuracy, completeness, reliability and timely preparation of accounting data. If good internal control exists in any organization, management can use information with greater reliance to maintain their business activities properly which provide AIS. But if internal control is not strong, management can not achieve its goal. The internal control system consists of two major categories such as accounting control and administrative control. From an overview of annual reports and companies executives of the selected companies it is evident that the selected companies have established an effective internal control system as a part of good corporate governance to maintain accountability, integrity and security of its assets as well as information. The internal control system guides the company with regard to processing of every transaction, authority

level for approval of the transaction, documentation, access to the systems and related responsibilities. As the business of the company evolves continuously, the requirements for amendment and improvement of internal control systems are also a continuous process. The external auditors and the internal auditors review the company's internal controls on an annual basis. To ensure proper safeguarding of assets, physical verification of network assets is conducted periodically and all risks relating to these assets are properly insured both nationally and internationally. Internal control is a process, supported by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of company objectives in the areas of effectiveness and efficiency of operations, reliability of financial reporting and compliance with laws and regulations. The major characteristics of existing internal control systems of company # 1 are functional responsibilities are appropriated segregated, day to day transactions and recording thereof are supervised by responsible officials, existence of a system of authorization procedure that is adequate to provide accounting control over assets, liability, revenue and expenses, existence of a system of periodic comparison of record with actual assets and liabilities and action to correct differences and existence of a recording procedure which check that transaction to be recorded and processed have been authorized. The benefits of exiting internal control systems of company # 1 are assets are safeguard, transaction are properly processed and recorded, authority and responsibility become co-extensive, routine supervision of day to day transaction, assets are properly handled and accurate financial reporting and adequate disclosures. The characteristics of internal control systems of company # 2 are day to day transactions and recording thereof are supervised by responsible officials and existence of a recording procedure which check that transaction to be recorded and processed have been authorized. The benefits of existing internal control systems of company # 2 is transaction are properly processed and recorded. Internal control of company # 2 over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Internal control over financial reporting includes policies and procedures such as pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transaction and dispositions of the assets, proceed reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of management and directors and provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition assets that could have a material effect on the financial statements. The problem of existing internal controls systems of company # 2 is all the areas are not duly covered by the internal control system and the suggestions of existing internal control systems are physical check should be regularly done and duties and responsibilities should be clearly divided. Researcher also collected the opinions of the respondents regarding the internal control of the selected companies and results given below:

Table # 2: Table showing the various types of internal control and opinion of the respondents regarding the various types of internal control for the selected companies

Items	CA		CMA		Tin A		Total	
	No	%	No	%	No	%	No	%
1. Physical check should be regularly done	15	60	14	56	10	40	39	52
2. To examine the existence of assets	16	64	13	52	07	28	36	48
3. Duties and responsibilities should be	19	76	16	64	10	40	45	60

clearly divided and duties should rotate								
4. There should not be any loophole in the authorization process	12	48	11	44	04	16	27	36
5. All of the above	08	32	06	24	04	16	18	24
Total	25		25		25		75	

(Source: Opinion Survey Reports)

* The responses of 25 respondents regarding items (1 to 5) are overlapping

Table # 2 shows that 52.00% of the respondents have opined that the physical check should be regularly done, 48.00% of the respondents have opined that to examine the existence of assets, 60.00% of the respondents have opined that the duties and responsibilities should be clearly divided and duties should rotate, 36.00% of the respondents have opined that there should not be any loophole in the authorization process and 24.00% of the respondents have opined that the all alternatives of the selected companies. The majority respondents have opined that the duties and responsibilities should be clearly divided and duties should rotate of the selected mobile telecommunication companies for increasing the efficiency of AIS.

Table # 3: Table showing the various factors to measure the effectiveness of internal control system and opinions of the respondents regarding the these factors which consider for measuring the effectiveness of internal control system of the selected companies

Items	CA		CMA		Tin A		Total	
	No	%	No	%	No	%	No	%
1. The internal control environment is helpful for achieving entity's specify objective	09	36	07	28	08	32	24	32.00
2. The internal control system ensures compliance with applicable laws and regulations	17	68	15	60	06	24	38	50.67
3. The internal control system is properly designed to handle transaction processing, safeguarding of assets, prevention of errors and frauds and detection of errors and frauds	20	80	16	64	10	40	46	61.33
4. The internal control system ensures separation of operations and custody of the assets	10	40	09	36	06	24	25	33.33
5. All of the above	07	28	05	20	03	12	15	20.00
Total	25		25		25		75	

(Source: Opinion Survey Reports)

* The responses of 25 respondents regarding items (1 to 5) are overlapping

Table # 3 shows that 32.00% of the respondents have opined that the internal control systems environment is helpful for achieving entity's specify objective, 50.67% of the respondents have opined that the internal control system ensures compliance with applicable laws and regulations, 61.33% of the respondents have opined that the internal control system is properly designed to handle transaction processing, safeguarding of assets, prevention of errors and frauds and detection of errors and frauds, 33.33% of the respondents have opined that the internal control system ensures separation of operations and custody of the assets and 20.00% of the respondents have opined that the all alternatives to measure the effectiveness of internal control system of the selected companies. The majority respondents have opined that the internal control system is properly designed to handle transaction processing, safeguarding of assets, prevention of

errors and frauds and detection of errors and frauds as a factor to measure the effectiveness of the internal control systems of the selected companies. There are five essential components of internal control which are control environment, risk assessment, control activities, information and communication and monitoring. All of these five components of internal control are embedded in the control culture of the selected mobile telecommunication companies. The operational activities of the selected companies in the light of policies on procedures for ensuring an effective internal control, transparency and accountability and observe that the selected companies have control over cash payments and they have flexible internal control system that provides the opportunity for continuous improvement leads to increase in the efficiency of Accounting Information Systems of the selected mobile telecommunication companies.

Proper Securities Measure:

Securities measure is effective way to judge the efficiency of Accounting Information Systems of the selected companies. If there is any security measure in any business firm then its existence will augment the efficiency of the Accounting Information Systems. This efficiency of Accounting Information Systems is ensured because proper security measure safeguards assets of a firm. It also prevents unauthorized access by the users. Improper alteration of data can be prevented and reconstruction of lost data and prevention of breakdown of machinery can also be possible through installation of a goods security measure. Security measures cover all transaction cycles from inputs through procedures to outputs. It also extends to the organization, physical facilities and operations, management practices, and other aspects of the firm. Security measure is essential for any business organization because to safeguard the assets of a firm, protection from unauthorized access, protection from disasters, protection from breakdowns and interruptions, protection from undetected access, protection from loss or improper alteration and recovery and reconstruction of lost data. Assets such as cash and inventory may be stolen or lost, and facilities such as a copy machine may be damaged or stolen. Data or information may be accessed and read or even changed by unauthorized persons, with possible adverse consequences. To safeguard its resources, a firm should implement a variety of security measures. Adequate security measures enable a firm to provide on-going protection of its computer facilities and other physical facilities maintain the integrity and privacy of its data files, and avoid serious damage or disastrous losses. Certain security measures protect against acts of nature, whereas others are intended to inhibit human actions. Some security measures are highly technical and sophisticated especially when providing security for centralized data bases and data communications networks. Other security measures are preventive in nature in that they prevent risk exposures from occurring. For instance a password could be used to prevent one of information age's bookkeepers from intentionally accessing unauthorized data such as the executive payroll file. Security measures focus on physical security and data or information security (Wilkinson et. al, 1997). From an overview of the opinions of the company executives we observe that there is a sufficient security measure in the selected companies. No unauthorized persons have access to the assets and the computer room. Physical handling of assets and maintenance of records relating to the assets are separate. Researcher also collected opinions of the respondents regarding the various security measures of the selected companies and results given below:

Table # 4: Table showing the various security measures and opinion of the respondents regarding the various types of security measure for proper security of information produced by the Accounting Information Systems of the selected companies

Items	CA		CMA		T in A		Total	
	No	%	No	%	No	%	No	%
1. Access to computers should be restricted	15	60	12	48	08	32	35	46.67
2. Use file password	11	44	13	52	07	28	31	41.33
3. Use of data backup and reconstruction procedure	18	72	16	64	10	40	44	58.67
4. Unauthorized tampering of data should be prevented	17	68	14	56	08	32	39	52.00
5. All of the above	08	32	07	28	05	20	20	26.67
Total	25		25		25		75	

(Source: Opinion Survey Reports)

* The responses of 25 respondents regarding items (1 to 5) are overlapping

Table # 4 shows that 46.67% of the respondents have opined that the access to computers should be restricted, 41.33% of the respondents have opined that the use file password, 58.67% of the respondents have opined that the use of data backup and reconstruction procedure, 52.00% of the respondents have opined that the unauthorized tampering of data should be prevented and 26.67% of the respondents have opined that the all alternatives for proper security of information produced by the Accounting Information Systems of the selected mobile telecommunication companies. The majority respondents have suggested that the use of data backup and reconstruction procedure as a security measure for proper security of information produced by the Accounting Information Systems of the selected mobile telecommunication companies.

Good Documentation:

Documentation is another important factor to judge the efficiency of Accounting Information Systems of the selected companies. Good documentation is essential for providing reliable and relevant information which helps management to perform business activities properly. Good documentation is used as the basis for preparing the financial statements, which consists of income statement, balance sheet, cash flow statement, owner's equity statement and others statement. These accounting statements are then made available to both management and a variety of external users to help them reach better informed decisions. The accounting process begins with a transaction and completes with the preparation of financial statement. Documentation pertaining to transaction processing has one central purpose: to communicate the elements and procedures to those who are to use, design, or evaluate the transaction processing system. With respect to the users the documentation helps to ensure that they will perform procedures reliably, consistently, and efficiently.

It also aids in the training of newly employed users. With respect to the systems analysts, accountants, and other designers, the documentation provides the means of visualizing the elements and flows of the newly designed system. It also enables the designers to spot redundant operations and other processing deficiencies in the current system. With respect to the auditors, managers, and other evaluators, the documentation provides the standard against which the actual operation of the system is to be evaluated. Documentation

techniques can also be used to portray the actual operations in order to highlight control weaknesses for the evaluators (Wilkinson, 1986). Documents quite naturally originate in many different departments of a company, but copies of all of them are sent to the accounts department where they are summarized, analyzed, and then entered in the books of accounts. From an overview of the annual audited reports of the selected companies and opinions of the company executives and professional accountants, researcher observes that there is a sufficient document in the selected companies to maintain the various activities. Selected companies maintain various files such as master file, transaction file; reference file and history file for recording their business activities properly. Selected companies use accounting software to process all types of accounting cycle and preparing financial statements such as income statement, balance sheet, cash flow and owners' equity to record the result of all the transactions at the end of every accounting period. The Accounting Information Systems of the selected companies is fully computerized. They use accounting software for recording of transactions. The selected companies prepare financial statement on historical cost convention and going concern basis and management use these statements for decision making. The selected companies use giving number for codifying accounts and use audit trail for linking transaction processing. The selected companies preserve source documents by in a guard file at the initiating stage, in hard disk of the computer and in the network.

Separation of Operation from Accounting:

Separation of operation and accounting is an important way to judge the efficiency of Accounting Information Systems of the selected companies. Accounting information systems is a system of records a business keeps maintaining its accounting system. Its purpose is to accumulate data and provide decision makers such as investors, creditors, managers, and the information to make decision. The Accounting Information Systems provides efficient transfer of data that are necessary to be able to assist the information user, especially those who are not so adept to accounting and financial reporting. Correct and accurate information are necessary in order to arrive to a sound decision which would encourage shareholder value. One of the major purposes of Accounting Information Systems is to support the day to day business operations and many essential activities such as data collection, data management, data maintenance, data control and information generation for fulfilling this purpose consists of processing accounting transactions arising from external sources, monitoring internal physical operations, and preparing such outputs as operational documents and financial statements. The accountants that are engaged in the processing of transaction must be separated from cash collection procedure to ensure the prevention of manipulation of accounts. This activities increase the quality of accounting information produced by Accounting Information Systems. From an overview of the selected companies they follow separation to record various activities like sale orders, purchase orders, receiving reports, employee time cards, deposit slips and checks and particular officer performs particular activities to achieve their aims. The selected companies maintain separate AIS department and maintain various documents for recording various business activities for various purpose such as reporting to interested users, decision making and control and generated various reports through AIS such as ratio analysis, working capital forecast, variance analysis and break-even analysis for internal decision making and control purpose. The selected companies take financing decision, investment decision, capital structure decision, working capital decision, pricing decision, servicing decision and outsourcing decision with the help of Accounting Information Systems and performing various managerial functions such as planning, coordinating, controlling, directing, budgeting,

motivating and decision making. The selected companies have been improved AIS for changing growth of business activities and maintain news files.

Extent of Disclosure:

Extent of disclosure is another important indicator to judge the efficiency of Accounting Information Systems of the selected companies. Disclosure in financial reporting is the presentation of information necessary for the optimum operation of efficient capital market. As we know there are different users of accounting information. The users group needs accounting information to decide in their respective field of interest. For example the investor group requires information regarding investment feasibility. The creditors group requires information to form judgment regarding the credit worthiness of the borrows. Thus the needs for information of the different groups vary. So, a company has to meet the demand of users but it is a difficult task to meet the demand of all users because there are cost constraints. So, in the light of foregoing discussion disclosure means disseminating relevant financial information about the economic affairs of a business enterprise to the audience of interest. Disclosure means the dissemination of relevant, material, and understandable information, both financial and non-financial, from the private domain to the knowledgeable public domain on a consistent basis. The disclosure scores of the selected companies are given below:

Table # 5: Table showing the disclosure score of the selected companies during the study period from 2007-08 to 2011-12

Financial Year	Company # 1	Company # 2	t values	SL
2007-08	61.02	50.22	37.269	0.000
2008-09	62.14	51.45		
2009-10	62.16	51.86		
2010-11	63.45	52.16		
2011-12	64.74	52.72		
Avg.	62.70	51.68		
SD	1.43	0.94		
CV	2.28	1.82		
Maximum	64.74	52.72		
Minimum	61.02	50.22		

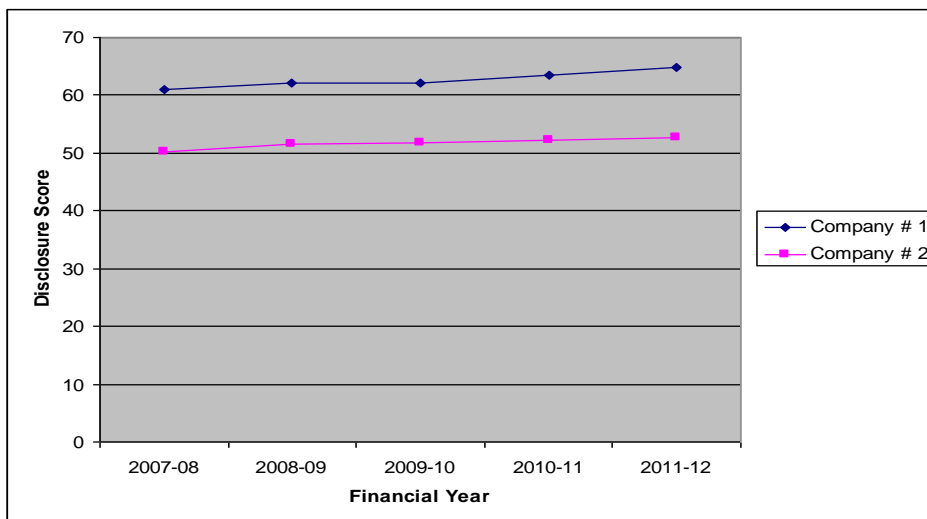
(Source: Audited Annual Reports of the Selected Companies from 2007-08 to 2011-12)

Table 5 shows that the disclosure scores of the selected companies during the period under study. The table also shows that the disclosure score has increased tendency. The average disclosure scores of selected mobile telecommunication companies are 62.70 and 51.68 respectively. The standard deviations of disclosure scores of the selected mobile telecommunication companies are 1.43 and 0.94 respectively. The coefficients of variation of disclosure scores of the selected mobile telecommunication companies are 2.28 and 1.82 respectively during the period under study.

The maximum and minimum value of disclosure scores of Company # 1 is 64.74 and 61.02 respectively and Company # 2 is 52.72 and 50.22 respectively during the period under study. The table also shows that the disclosure scores of Company # 1 is higher than Company # 2 during the study period. In order to see whether there is any significant difference between the sample means and conducted paired sample t test using SPSS 7.5. The result shows that t value

is 37.269 which are significant at 0.000 levels. This indicates that there is significant difference between the disclosure scores of the selected mobile telecommunication companies during the period under study. The table shows that the disclosure scores are moderately satisfactory during the period under study.

Graph # 1: Graphical presentation of the disclosure score of the selected companies are given below:



(Source: Audited Annual Reports of the Selected Companies from 2007-08 to 2011-12)

Researcher also made an opinion survey of the respondents regarding the adequacy of accounting information produced by AIS of the selected mobile telecommunication companies and developed a null hypothesis and conducted χ^2 test and ANOVA test to test the null hypotheses.

Ho1: There is no significant difference of opinion among the respondents regarding the adequacy of accounting information produced by AIS of the selected companies

Table # 6: Opinions of the respondents regarding the adequacy of accounting information produced by Accounting Information Systems of the selected companies

	Respondents Groups								χ^2	SL
	CA		CMA		Tin A		SC			
Types of Opinions	No	%	No	%	No	%	No	%	No	%
Greatly Adequate	06	24	09	36	07	28	08	32	30	30
Moderately Adequate	17	68	13	52	13	52	14	56	57	57
Slightly Adequate	01	4	03	13	03	12	02	08	09	09
Neutral	01	4	00	00	01	04	01	04	03	03
Not Adequate	00	00	00	00	01	04	00	00	01	01
Total	25	100	25	100	25	100	25	100	100	100

(Source: Opinion Survey Reports)

Table # 6 shows that 30.00% of the respondents thought that the accounting information produced by AIS of the selected companies is greatly adequate, 57.00% of the respondents mentioned that the accounting information produced by AIS of the selected companies is moderately adequate, 9.00% of the respondents opined that the accounting information

produced by AIS of the selected companies is slightly adequate, 3.00% of the respondents were neutral and 1.00% of the respondents opined that the accounting information produced by AIS of the selected companies is not adequate. The majority respondents thought that the accounting information produced by AIS of the selected companies is moderately adequate. But the opinions of the company executives are that the accounting information of company # 1 is greatly adequate produced by AIS and the accounting information of company # 2 is greatly adequate produced by AIS. In order to see whether there is any significant difference between the opinions of the respondents' regarding the adequacy of accounting information produced by AIS of the selected companies and conducted χ^2 test using SPSS 7.5. Researchers observe that the value of χ^2 is 6.643 which is significant at 0.880 levels. So, the null hypothesis is accepted which means that there is no significant difference of opinion among the respondents regarding the adequacy of accounting information produced by AIS of the selected companies. In order to find out the difference between groups and within groups we have conducted ANOVA test.

Table # 6.A: Table showing the results of ANOVA test regarding the adequacy of accounting information made by AIS of the selected companies

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.04	3	0.347	0.579	0.630
Within Groups	57.52	96	0.599		
Total	58.56	99			

(Source: Opinion Survey Reports)

The above table shows that there is no significant different of opinions on the adequacy of accounting information produced by Accounting Information Systems of selected mobile telecommunication companies among the different respondents groups.

Cost Effectiveness:

Cost effectiveness is another factor to judge the efficiency of Accounting Information Systems of the selected companies. AIS can lead to cost effectiveness because efficient AIS helps identify excess cost and those excess cost can be reduced by the management. Incorporating a control or security measure into a system involves a cost. Certain types of controls such as corrective controls, documentation controls, and moist security measures are quite expensive. In some cases, even controls that complement other controls may be found to be cost-effective, since they increase reliability by detecting errors that may be missed by the other controls. On the other hand, certain complementary controls may not improve reliability or reduce risks to a significant degree, and hence may not be desirable additions. Since controls form an interlocking framework, all controls should be reviewed and assessed by means of a cost-benefit analysis. Preferably, this review and assessment should take place during a systems development activity; however, it may be performed at any time (Wilkinson, J.W., 1986). The cost effectiveness can be measured with the help of operating ratio and. the operating ratio of the selected companies are given below:

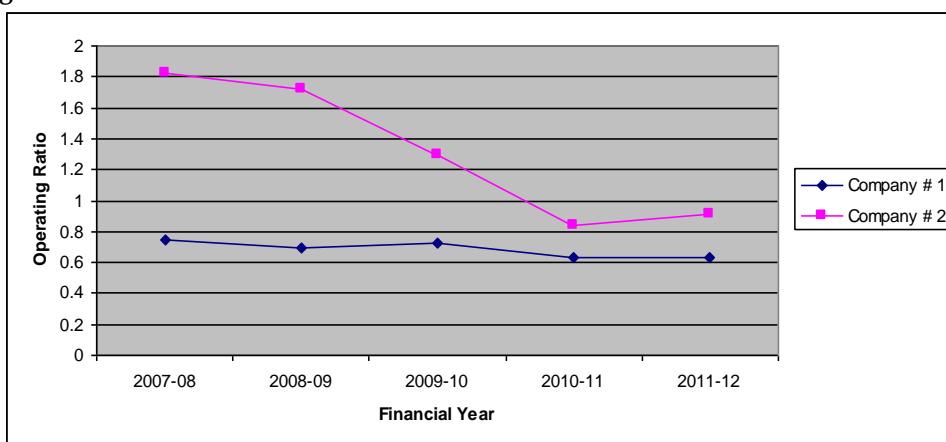
Table # 7: Table showing the operating ratio of the selected companies during the study period from 2007-08 to 2011-12

Financial Year	Company # 1	Company # 2	t values	SL
2007-08	0.75	1.82	(3.489)	0.025
2008-09	0.69	1.72		
2009-10	0.73	1.30		
2010-11	0.63	0.84		
2011-12	0.63	0.91		
Avg.	0.69	1.32		
SD	0.06	0.45		
CV	8.09	34.12		
Maximum	0.75	1.82		
Minimum	0.63	0.84		

(Source: Audited Annual Reports of the Selected Companies from 2007-08 to 2011-12)

Table 7 shows that the relation between total operating costs and operating revenues during the period under study. The table also shows that the operating ratios increasing and decreasing tendency. The average operating ratios of selected mobile telecommunication companies are 0.69 and 1.32 respectively. The standard deviations of operating ratios of the selected companies are 0.06 and 0.45 respectively. The coefficients of variation of operating ratios of the selected companies are 8.09 and 34.12 respectively during the period under study. The maximum and minimum value of operating ratios of Company # 1 is 0.75 and 0.63 million respectively and Company # 2 is 1.82 and 0.84 respectively during the period under study. The table also shows that the operating ratio of Company # 1 is satisfactory but Company # 2 is not satisfactory during the study period. In order to see whether there is any significant difference between the sample means and conducted paired sample t test using SPSS. The result shows that t value is (3.489) which are significant at 0.025 levels. This indicates that there is significant difference between the operating ratios of the selected mobile telecommunication companies during the period under study.

Graph # 2: Graphical presentation of the operating ratio of the selected companies is given below:



(Source: Audited Annual Reports of the Selected Companies from 2007-08 to 2011-12)

Independent Internal and External Audit:

Internal audit is an independent appraisal function established with an organization to examine and evaluate its activities as a service to the organization. The objective of internal audit is to assist members of the organization in the effective discharge of their responsibilities. To this end, internal audit furnishes them with analyses, appraisals, recommendations, counsel and information concerning the reviewed. Internal audit is any systematic investigation or appraisal of procedures or operations by an employee of the concerned entity for the purpose of determining conformity with prescribed criteria. As per paragraph 3 of BAS 610: considering the work on internal audit (ISA 610). Internal auditing means an appraisal activity established with an entity as a service to the entity. Its functions include, amongst other things, examining, evaluating and monitoring the adequacy and effectiveness of the accounting and internal control systems. External audit is one which is performed by chartered accountants (CAs) who are independent of the entity whose assertions or representations are being audited. All the companies registered under the Companies Act are subject to external audit by CAs in public practice. The selected companies have an internal audit department that monitors the operational activities of the companies in the light of policies on procedures set by the Board of Directors and the Management Team for ensuring an effective internal control, transparency and accountability in the organization. Thus from the statement of Board of Director we observe that both the selected companies have control over cash payments and they have flexible internal control system that provides the opportunity for continuous improvement leads to increase in the efficiency of Accounting Information Systems of the selected companies.

CONCLUSION

The present study evaluates the efficiency of Accounting Information Systems of the selected mobile telecommunication companies. The total Accounting Information System of the selected mobile telecommunication companies is computerized and all transactions are processed by the computer. The use of computerized AIS gives opportunities for the selected mobile telecommunication companies to perform the accounting functions more effectively and efficiently because the use of computerized AIS bears significant time and cost savings. The existing Accounting Information Systems help recording various accounting transactions, processing these transactions and prepare the financial statements like income statement, balance sheet, owner's equity statement, cash flow statement which are the snapshot of the financial position of the organization and the main outputs of the accounting system. Existence of internal control system increases the efficiency of AIS through ensuring safeguarding of assets, reliability of accounting information, accuracy of accounting information. Existence of effective internal control system also increases efficiency of AIS through the prevention of frauds. Separation of operation and accounting also increases the efficiency of AIS because the separation of operation from accounting ensures correct processing of transactions without manipulation of figure. Existence of proper security measure also increases the efficiency of AIS through safeguarding the assets of a firm, ensuring the accuracy and reliability of accounting data and information, providing efficiency in all of the firm's operations and encouraging adherence to managements' prescribed policies and procedures. Good documentation is increased the efficiency of Accounting Information Systems. Good documentation is essential for providing reliable and relevant information which helps management to perform business activities properly. Accounting Information Systems also provide information which support to all levels of management activity such as operational level, middle level and top level management. So, the study concluded that since the various users of financial statement is decision oriented the preparation of the financial statement must be more carefully done for ensuring the qualitative characteristics of accounting information produced by Accounting Information Systems so that in can help take effective decision making process which activities is possible then the existent accounting information systems is worked with efficient. So, it can concluded that Accounting Information System is absolutely necessary for decision making in every

functional areas of an organization and every business organization should develop its Accounting Information Systems to avail its benefit.

REFERENCES

- Ahmed AA and Ahmad M. 2009. **An Empirical Analysis of Performance Measurement of the Disclosure in Financial Reporting: A Study of Banking Sector in Bangladesh** COMSATS Institute of Information Technology *2nd COMSATS International Business Research Conference*. Lahore, Pakistan: CIIT.
- Ahmed AA and Dey MM. 2011. **Accounting Disclosure Scenario: An Empirical Study of the Banking Sector of Bangladesh** *Accounting & Management Information Systems*, 9.
- Ahmed AA and Siddique MN. 2013. **Internet Banking Espousal in Bangladesh: A Probing Study** *Engineering International*, 1, 40-47.
- Ahmed AA, Dey MM, Akhter W and Raza A. 2011. **Timeliness attributes and the extent of accounting disclosure: a study of banking companies in Bangladesh** *Interdisciplinary Journal of Contemporary Research in Business*, 3, 915-925.
- Ahmed AA, Khan W and Hossain MS. 2011. **Reporting Practice of Accounting Disclosure on Changes in Listed Companies of Bangladesh** *ASA University Review*, 5, 83-96.
- Ahmed AA, Siddique MN and Masum AA. 2013. **Online Library Adoption in Bangladesh: An Empirical Study** University of Bahrain *Best Practices in Management, Design and Development of e-Courses: Standards of Excellence and Creativity*. Manama: IEEE.
- Ahmed AA. 2012. **Disclosure of Financial Reporting and Firm Structure as a Determinant: A Study on the Listed Companies of DSE** *ASA University Review*, 6, 44-60.
- Akter, et. al. (2007), "The effect of the phases of system development life cycle (SDLC) on the performance of Accounting Information System (AIS) development: the Bangladesh scenario", *ASA University Review*, Vol. 1, No.1 (First issue), July-December, PP. 203-216.
- Alam, et. al. (2007), "Factors affecting customer satisfaction in the mobile phone industry: An empirical study in Bangladesh", *Journal of Business Administration*, Vol. 33, No. 3 & 4, July & October, PP. 43-70.
- Al-kasswina (2012), "Study and Evaluation of Government Electronic Accounting Information Systems-a Field Study in the Hashemite Kingdom of Jordan", *Research Journal of Finance and Accounting*, ISSN 2222-1697 (paper) ISSN-2847 (online), Vol 3, no. 4
- Annual reports of the selected companies during the years from 2007-08 to 2011-12
- Dey, S. (2007), "Accounting Information System in Commercial Banks - an Evaluation in Bangladesh", *The Bangladesh Accountant*, April-June
- Fess, P.E. and Warren, C.S. (1990), "Accounting Principles", 16th Edition, South-Western Publishing Co., U.S.A
- GrameenPhone Ltd. and Sheba Telecom (Pvt.) Limited, Audited Annual Reports, 2001-2002 to 2005-2006.
- Habibullah, A.K.M. (1982), "Management Information System in Reference to Nationalized Commercial Banks in Bangladesh", *Bank Research and Development Review*, *Journal of Sonali Bank*, Vol. 2, No. 4, December, pp. 20-25.
- Jahan, M.S. (1999), "Quality of Information Used in Small Enterprises Marketing Management and Its Impact on Business: A Case Study of kushtia District", *Islamic University Studies*, Part-C, Vol. 2, No. 1, June, pp. 223-234.
- Larson, et. al. (2002), "Fundamental Accounting Principles", 16th Edition, Richard D. Irwin, Inc., U.S.A
- McCarthy, W.E. (2003), "The REA Modeling Approach to Teaching Accounting Information Systems", *Issues in Accounting Education*, Vol. 18, No. 4, November, pp. 427-441.
- Niswonger, C.R. and Fess, P. (1973), "Accounting Principles and Practices", South Western Publication Company, England
- Pyle, W.W. and Larson, K.D. (1984), "Fundamental Accounting Principles", Tenth Edition, Richard D. Irwin, Inc., U.S.A
- Romney et. al., (1997), *Accounting Information System*, Seventh Edition, Addison-Wesley
- Sajady, et. al. (2008), "Evaluation of the Effectiveness of Accounting Information Systems, *International Journal of Information Science & Technology*", Volume 6, Number 2, July/December
- Siddiqui, J. and Chowdhury, R.R. (2003), "Relevance of Accounting Information in Bangladesh: An Empirical Study", *Journal of Business Studies*, Vol. XXIV, No. 2 December, pp. 119-126.
- Sori, (2009), "Accounting Information Systems (AIS) and Knowledge Management: A Case Study", *American Journal of Scientific Research*, ISSN 1450-223X Issue 4.
- Steinbart, P. J. (1994), "Accounting Information Systems", Wesley Publishing Company, USA.
- Summers, E. L. (1989), "Accounting Information Systems", Houghton Mifflin Company, USA
- Weygandt, et. al. (1976), "Accounting Principles", John Wiley & Sons Inc., 6th Ed., New York
- Wilkinson, et. al. (1986), "Accounting and Information Systems", Second Edition, John Wiley and Sons, Inc., U.S.A

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