



STUDYING INFORMATION SYSTEM

Sonali Bank Limited

APRIL 23, 2018

INSTITUTE OF INFORMATION TECHNOLOGY
University of Dhaka



SUBMITTED TO

Mr. Md. Iftekharul Amin

Assistant Professor

Institute of Business Administration

University Of Dhaka

SUBMITTED BY

Group 03

Tahlil (803)

Tulshi Chandra Das (811)

Saara Sheneen (833)

Maloy Kanti Sarkar (834)

BSSE 08 Batch

Institute of Information Technology

University of Dhaka

Date: 23rd April, 2018

LETTER OF TRANSMITTAL

Mr. Md. Iftekharul Amin

Assistant Professor

Institute of Business Administration

University Of Dhaka

Subject: Submission of final report on Studying Information System Of Sonali Bank LTD.

Dear Sir,

With due respect, we are pleased to submit the final report on Studying Information System Of Sonali Bank LTD. Although this report may have shortcomings we did try our level best to produce an acceptable report. We would be highly obliged if you overlooked our mistakes and accepted our effort we put in this report.

Sincerely yours,

Tahlil (BSSE 0803)

Tulshi Chandra Das (BSSE 0811)

Saara Sheneen (BSSE 0833)

Maloy Kanti Sarkar (BSSE 0834)

BSSE 8th batch

Institute of Information Technology

University of Dhaka

ACKNOWLEDGEMENT

We are highly indebted for getting such a tremendous opportunity to prepare the report on - "Studying Information System Of Sonali Bank LTD.". We would like to thank wholeheartedly our course teacher, Mr. Md. Iftekharul Amin, Assistant Professor, Institute of Business Administration, University Of Dhaka, for giving us guidelines about how we can prepare this report. In completing this paper we have collected various important data and information from Sonali Bank LTD. We are thankful to all people who have helped us preparing this report.

Table of Contents

Chapter 1: INTRODUCTION.....	1
1.1 ORIGIN OF THE REPORT.....	3
1.2 OBJECTIVES	3
1.2.1 BROAD OBJECTIVE	3
1.2.2 SPECIFIC OBJECTIVE	3
1.3 SCOPE	3
1.4 LIMITATIONS	4
1.5 METHODOLOGY	4
1.5.1 DATA SOURCE	4
1.5.2 DATA ACCESSION METHOD	4
CHAPTER 2: BACKGROUND STUDY	5
Chapter 3: FINDINGS.....	10
3.1 OVERVIEW OF SONALI BANK LTD. AND ITS ACTIVITIES.....	10
3.1.1 SOME NOTABLE FEATURES OF SONALI BANK.....	11
3.2 EXISTING WORKFLOW AND THE INFORMATION SYSTEMS	11
3.3 SUMMARY OF FINDINGS.....	15
CHAPTER 4: CONCLUSION.....	16
CHAPTER 5: REFERENCES	17

Table of Figure

Figure 1: Notable Features	11
----------------------------------	----

Executive summary

This report is prepared to get a detailed information about information systems which are used in an organization. From this report, one can have an idea about information system of "Sonali Bank LTD". This bank is the largest state-owned leading commercial bank in Bangladesh having 1212 branches all over the country. In this bank, there are lots of department. Each department has a different task to perform. As our project is on the information system, we have focused on software that is used there. IT department mostly handles all of them. They have a departmental head (AGM). S/he is mostly considered as project manager. The senior programmer is also often considered as project manager. S/he basically communicates with senior programmers and AGM if there any problem occurs. Programmer basically is the team leader. Assistant programmers are the member of the developer team. They have two types of software; centralized and decentralized. Most data are stored in the centralized data center. Each branch has its own data center. But centralized data center has stores all data. Their main software is CVS. It is used for online branch banking. Sonali Bank has a partnership with the vendor. They have 49% share. Except for CVS, all other software that they use is developed by their own developer team. The names of other software are korkel, gts, clearing, sonali seba, inventory and shonchoy. They store all their data into the database. The main branch controls all other branches. If any transaction occurs in any branch, central data center stores that information immediately. They have support team, developer team, tester team. If any bug is found all of these teams work together to fix this bug. They have taken all necessary steps to maintain all software. They use almost all types of operating system. For CVS they use EIX, for clearing they use LINUX and windows for other software. They keep backup of all data so that if one server is down, they will be able to provide service till the server becomes fully functional. If a new employee is needed they send the number of empty post and Bangladesh bank recruits candidates. When a new employee is recruited, s/he must take training on how to use all software.

Chapter 1: INTRODUCTION

Data and information are often used interchangeably; however, the extent to which a set of data is informative to someone depends on the extent to which it is unexpected by that person. The amount of information content in a data stream may be characterized by its Shannon entropy [1]. While the concept of data is commonly associated with scientific research, data is collected by a huge range of organizations and institutions, including businesses (e.g., sales data, revenue, profits, stock price), governments (e.g., crime rates, unemployment rates, literacy rates) and non-governmental organizations (e.g., censuses of the number of homeless people by non-profit organizations). Data is measured, collected and reported, and analyzed, whereupon it can be visualized using graphs, images or other analysis tools. Data as a general concept refers to the fact that some existing information or knowledge is *represented* or *coded* in some form suitable for better usage or processing.

Information technology (IT) is the use of computers to store, retrieve, transmit, and manipulate data, or information, often in the context of a business or other enterprise [2]. IT is considered to be a subset of information and communications technology (ICT). Humans have been storing, retrieving, manipulating, and communicating information since the Sumerians in Mesopotamia developed writing in about 3000 BC [1], but the term information technology in its modern sense first appeared in a 1958 article published in the *Harvard Business Review*, authors Harold J. Leavitt and Thomas L. Whisler commented that "the new technology does not yet have a single established name. We shall call it information technology (IT)." Their definition consists of three categories: techniques for processing, the application of statistical and mathematical methods to decision-making, and the simulation of higher-order thinking through computer programs [2]. The term is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several products or services within an economy are associated with information technology, including computer hardware,

software, electronics, semiconductors, internet, telecom equipment, and e-commerce [3]. Based on the storage and processing technologies employed, it is possible to distinguish four distinct phases of IT development: pre-mechanical (3000 BC – 1450 AD), mechanical (1450–1840), electromechanical (1840–1940), and electronic (1940–present) [3].

An information system (IS) is an organized system for the collection, organization, storage and communication of information. More specifically, it is the study of complementary networks that people and organizations use to collect, filter, process, create and distribute data. Further, an information system (IS) is a group of components that interact to produce information. It focuses on the internal rather than the external [4]. A computer information system is a system that a branch of Science composed of people and computers that processes or interprets information. The term is also sometimes used in more restricted senses to refer to only the software used to run a computerized database or to refer to only a computer system. Some authors make a clear distinction between information systems, computer systems, and business processes. Information systems typically include an ICT component but are not purely concerned with ICT, focusing instead on the end use of information technology. Information systems are also different from business processes. Information systems help to control the performance of business processes [4]. As such, information systems interrelated with data systems on the one hand and activity systems on the other. An information system is a form of communication system in which data represent and are processed as a form of social memory. An information system can also be considered a semi-formal language which supports human decision making and action. Information systems are the primary focus of study for organizational informatics [4].

1.1 ORIGIN OF THE REPORT

The project is a requirement for the academic course BUS 503. The purpose of this project is to know about information system and culture of an organization.

1.2 OBJECTIVES

This section contains broad objective and specific objective, which are given below

1.2.1 BROAD OBJECTIVE

The broad objective of this project is to get familiarized with how the organization functions, its environment and culture. Different sections/departments, required qualities for getting job here, recruitment process, managerial level, the way of motivating employees.

1.2.2 SPECIFIC OBJECTIVE

The specific objectives of this project are

- to learn about the existing information system(s) which are running in the organization
- to observe existing workflow
- to learn about the advantages and disadvantages of using the system(s)
- to know how they maintain the system(s)
- to know the associated cost of the system(s)
- to know how they train their employee for using those systems

1.3 SCOPE

The scope of a project defines the specific project goals and the deliverables to be expected. In other words, we define what we would do and what we will not do. In our project, we have focused only on the information system of "Sonali Bank LTD".

1.4 LIMITATIONS

As we have only focused on information system of "Sonali Bank LTD", we have not discussed about their organizational culture, activities of other departments except IT department, their recruitment process and their organizational hierarchy. Our survey was only in Sonali Bank. So we could not gather information about other organization's information system. We could not talk with tester team, developing team, support team for time limitation.

1.5 METHODOLOGY

Any project involves data collection. In this section, we mention the sources of data and the methods of data accession.

1.5.1 DATA SOURCE

The source of data for our project can be categorized into two groups

- **Primary Source:** employees of "Sonali Bank LTD".
- **Secondary Source:** website of "Sonali Bank LTD".

1.5.2 DATA ACCESSION METHOD

For this project, we have accessed data by the following methods

- Interviewing employees of "Sonali Bank LTD".
- Visiting the official website of "Sonali Bank LTD".

CHAPTER 2: BACKGROUND STUDY

In every organization, it is necessary to keep track of different data like employee information, transaction record, maintenance details etc. Previously, information was stored manually. Every organization used to keep a book to store all information. But time has changed. Modern age is the age of science. Now everything is done using different types of technology. In this modern age, every organization needs to deal with large amounts of data. Data are basic values or facts and are organized in a database. Many people think of data as synonymous with information; however, information actually consists of data that has been organized to help answers questions and to solve problems. An information system is defined as the software that helps organize and analyze data. So, the purpose of an information system is to turn raw data into useful information that can be used for decision making in an organization [1]. Information system has some general and special purpose. There are some general types of information systems. For example, a database management system (DBMS) is a combination of software and data that makes it possible to organize and analyze data. DBMS software is typically not designed to work with a specific organization or a specific type of analysis. Rather, it is a general-purpose information system. In contrast, there are a number of specialized information systems that have been specifically designed to support a particular process within an organization or to carry out very specific analysis tasks. For example, enterprise resource planning (ERP) is an information system used to integrate the management of all internal and external information across an entire organization [1]. The main task of a specific information system is to support operations, management and decision-making. The information and communication technology (ICT) that an organization uses, and also the way in which people interact with this technology in support of business processes are all parts of the information system.

The history of information systems only spans five decades. The history of information systems can be divided into the five eras, (Zinat mehrsa, 2013):

First era: Mainframe and minicomputer computing

Second era: Personal computers

Third era: Client/server networks

Fourth era: Enterprise computing

Fifth era: Cloud computing

First Era: The first era, pre-1965, was the period of huge mainframe computers that were housed in the special temperature-controlled room. Those required computer technicians to operate. IBM was the one-stop supplier of hardware and software. Computer time-sharing was common because of the enormous cost of owning and operating mainframes. As computer technology advanced and computers shrank in size, companies could afford minicomputers, still enormously expensive by today's standard but sufficiently affordable for large companies to own and do their own in-house computing.

Second Era: The second era of personal computers started in 1965 with the introduction of the microprocessor. By the 1980s, it was in full bloom with the proliferation of the low-cost Apple I and II and the IBM personal computer, or simply PC. The introduction of VisiCalc spreadsheet software empowered ordinary employees with the ability to do tasks that companies paid huge sums to do 10 years earlier.

Third Era: As computing power and autonomy devolved to ordinary employees in the 1980s, a simultaneous need arose to share computer information with other employees within the business enterprise. This need advanced the transition to the third era MIS client-server networks. Employees at all levels of the organization could share information in a variety of formats through computer terminals linked to computer servers over common networks called intranets.

Fourth Era: The fourth era, enterprise computing, consolidated disparate single-application software applications used by different departments into one integrated enterprise platform. This was accessed over high-speed networks. Enterprise software solutions integrated essential business operations including marketing and sales,

accounting, finance, human resources, inventory and manufacturing to harmonize work and facilitate cooperation across the entire enterprise. Although the application modules used and information accessed differ by departments and levels of authority, enterprise computing allows a 360-degree view of the entire business operation.

Fifth Era: The exponential growth in Internet bandwidth consumption is ushering in the fifth era of cloud computing. According to Cisco Systems, worldwide Internet traffic is expected to reach 2 Zettabytes annually by 2019. For context, one Zettabyte equals 1,000 Exabyte's, and one Exabyte equals 1 billion gigabytes. Cloud computing unchains everybody from office-bound PCs, allowing access to enterprise MIS from anywhere with mobile devices.

The six major types of information systems corresponding to each organizational level are [5]:

1. Transaction Processing Systems (TPS): serve the operational level of an organization.
2. Knowledge work systems (KWS)
3. Office automation systems (OAS) to serve the knowledge level of an organization.
4. Decision-support systems (DSS)
5. Management information systems (MIS) serve the management level of the organization.
6. Executive support systems (ESS) serve the strategic level of an organization.

The evolution of system development methods has been gradual. The three stages in the evolution of system development methods may be identified as:

1) First generation methods

Components of First generation methods:

- Structured programming.
- Modular design and structure charts.

- Programming style.

2) Second generation methods. In First Generation (FG) methods developers were process oriented or data oriented and used modeling in fairly informal way. In all Second generation methods, main stress is on the construction and checking of models.

1. FG methods are largely independent approaches for dealing with each stages of system development life cycle. Second Generation methods provide a smoother development path from requirements analysis to later design and implementation stages.
2. FG model is used to capture system requirements in policy terms, later models elaborate on how the model is mapped onto available technology because models are not independent but each model evolves into the next, taking into account another layer of technology.
3. FG methods viewed the system from one viewpoint with relative poor modeling from other viewpoints. SG methods regard system functions and data as two equally important aspects the system.

3) Third generation methods.

The second generation view of models is rather low-level. It deals with individual diagrams rather than the larger issues of how individual analysis and design unit fit together and interact.

Third generation methods will be distinguished by a philosophy that is more concerned with the whole rather than parts [5].

While information systems may differ in how they are used within an organization, they typically contain the following components:

1. **Hardware:** Computer-based information systems use computer hardware, such as processors, monitors, keyboard and printers.
2. **Software:** These are the programs used to organize, process and analyze data.
3. **Databases:** Information systems work with data, organized into tables and files.

4. **Network:** Different elements need to be connected to each other, especially if many different people in an organization use the same information system.
5. **Procedures:** These describe how specific data are processed and analyzed in order to get the answers for which the information system is designed.

The first four components are part of the general information technology (IT) of an organization [5].

Chapter 3: FINDINGS

In this section, we will be discussing about sources of data, existing workflow of information system and the company overview. For preparing this report we had to collect different types of data related to the information system of “Sonali Bank”. Our sources of collecting data are given below:

- Chairman of “Sonali Bank” (Main Branch)
- AGM of IT Division
- Senior Software Developer
- Online official site of “Sonali Bank”

3.1 OVERVIEW OF SONALI BANK LTD. AND ITS ACTIVITIES

Soon after independence of the country, Sonali Bank emerged as the largest and leading Nationalized Commercial Bank by proclamation of the Banks' Nationalization Order 1972 (Presidential Order-26) liquidating the then National Bank of Pakistan, Premier Bank and Bank of Bahawalpur [6]. As a fully state-owned institution, the bank had been discharging its nation-building responsibilities by undertaking government entrusted different socio-economic schemes as well as money market activities of its own volition, covering all spheres of the economy.

The bank has been converted to a Public Limited Company with 100% ownership of the government and started functioning as Sonali Bank Limited from November 15, 2007, taking over all assets, liabilities and business of Sonali Bank. After corporatization, the management of the bank has been given required autonomy to make the bank competitive & to run its business effectively [6]. Sonali Bank Limited is governed by a Board of Directors consisting of 11 (Eleven) members [6]. The Bank is headed by the CEO & Managing Director, who is a well-known Banker and a reputed professional. The corporate headquarter of the bank is located at Motijheel, Dhaka, Bangladesh, the main commercial center of the capital.

3.1.1 SOME NOTABLE FEATURES OF SONALI BANK

Some notable features of Sonali Bank are given below [6]

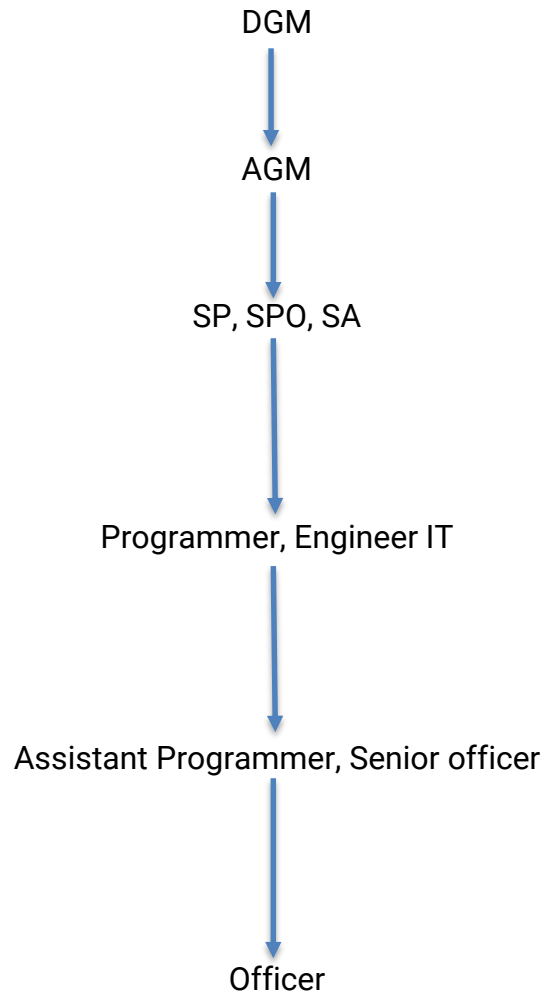
Capital Structure:	
Authorised Capital	: Tk. 6000.00 Crore
Paid up Capital	: Tk. 3830.00 Crore
Branches & Subsidiaries:	
1 Total No of Branches	1212
a. No of Foreign branches	2
b. No of Local branches	1210
i) No of Rural Branches	744
ii) No of Urban Branches	466
2 No of Regional Offices	16
3 No of Principal Offices	46
4 No of G.M. Offices	11
Subsidiaries:	
1. Sonali Exchange Company Incorporated (SECI) having 10 (Ten) branches in USA.	
2. Sonali Investment Limited (Merchant Banking) having 4 (Four) branches at Motijheel, Paltan, Uttara, Mirpur in Dhaka and 1 (One) branch in Khulna, Bangladesh.	
Associates:	
1. Sonali Bank (UK) Limited having 2 (Two) branches in UK.	
2. Sonali Polaris FT Limited	
Representative Offices	: 3 : 1(One) in Jeddah, KSA; 1 (One) in Riyadh, KSA and 1 (One) in Kuwait.
Correspondenc	: 639

Figure 1: Notable Features

3.2 EXISTING WORKFLOW AND THE INFORMATION SYSTEMS

“Sonali Bank” maintains a well-disciplined and strong communication among people working in the same department. For completing any kind of project successfully,

strong communication is necessary. The prime reason behind the success of “Sonali Bank” as an organization is the coordination between several departments. In IT department, a strong communication can be seen. The workflow hierarchy is given below:



Deputy General Manager: DGM is considered as the top person in this hierarchy. Everybody in the department has to report everything to DGM.

Assistant General Manager: AGM is considered as departmental head. S/he reports anything to DGM. S/he manages all the projects of the department. S/he is also considered as project manager.

Senior Programmer: SP is the project manager who manages the whole project. If programmers face any problem s/he is the one who is reported. S/he takes steps to solve the problems according to the rules. If needed, s/he notifies AGM or the head of the department. S/he provides all necessary things to the development team. Developer team communicates with higher authority through SP.

Programmer: Programmers are the team members. They develop software. If they face any problem the report to SP.

Assistant Programmers: They help programmers to develop software. They prepare documents.

Officers: If other level needs anything, they ask officers to do it.

In Sonali Bank, they have two types of software to maintain financial data. One is centralized data software where data from all branches are stored and the other one is decentralized data software where data from the particular branch are stored. Maximum data are stored in the centralized data center. They have a special software called CVS for online branch banking and this software is centralized. They have some centralized software. For Banking, they have CVS, GTS for government transaction, Savings letter system, Inventory system. They have a software called "Sonali Seba" by which they give service to the different company. They have almost 63 software to maintain their data. The CVS software of Sonali Bank is joint venture with Vendor. The joint venture percentage is 49% of Sonali Bank and 51% of Vendor. The CVS software is called central software. All branches are connected in that software. The software is also called branch banking software. If they find any bug in this software the vendor company only fixed the bug. They cannot solve any problem related this software. They are maintaining all kinds of security like as physical security and technical security to protect the software. They use routers, switch to maintain data software. They use antivirus centrally. They have Core Cal license (Active directory, Exchange directory, Skype for Business, SharePoint, System center) in which they have started to control their branch. They have two types of storage one is DC and another is DR. These storage synchronize in real time. They have daily backup called incremental backup and

the backup size is 100 GB. The data increase 1 GB daily and they backup it. The data store in data center and recovery center simultaneously. They have also stored some data in the mobile hard drive. In the centralized data center, all transaction in each branch is shown and stored in real time. The first banking software in Sonali Bank was decentralized and store data branch to branch. They have also some decentralized software. One of the software is CL. In this software, data store both branch and online. They use Thumb expression to record the in and out time of each employee and that store in the database. When the new employees come they will train them daily during one month. And this training is mandatory for all the office staff. They also keep a record of work progress of office employee. All the activities are monitored. If any employee tries to do any unfair job, they will be caught and suspended. Whenever any employee uses any software, her access time and activities are stored in it. So, there is no chance to do any kind of dishonest job. Like every other organization, IS of Sonali Bank also have life cycles which are managed by different software teams. Description of different teams are given below:

Developer team: They maintain software and develop software. If any change request comes it came first to the developer team.

Support Team: They support the developer team to develop the software. If any change request came to the support team helps the developer team.

Change Team: If any change request comes then the change team manage the change with the programmer.

Tester Team: The tester team test the software and then the software alive for using.

If any problem in the hardware they can manage it by two ways. The DBA(DataBase Administrator) team and Application Administrator team. If the problem is related to the database then the DBA Team handle it. If the problem is related to OS then the OS team handle it. If there any problem related to the software which we called bug, then the programmer solve it. If there any problem in the server then vendor company support it.

They use different OS (Operating System) but most of them use Windows. They use AIX for CVS software and LINUX for Tearing software.

The recruitment policy of Sonali Bank is totally handled by Bangladesh Bank. If any employee is needed for any division, they generally inform Bangladesh Bank to select a candidate for the post.

The organizational ensures safety and a very friendly working environment. Everyone has a strong connection with each other. If anyone needs any help or any kind of training, the bank provides all the facilities. If anyone faces any difficulties, other co-workers come forward to help.

3.3 SUMMARY OF FINDINGS

From above discussion, we can say that Sonali Bank takes steps to maintain software. They do not only use software, they ensure safety and security. They have some teams like developer team, testing team, support team etc. for maintaining software properly. They use CVS for branch banking and other software for inventory, attendance, tracking work progress. They use modern technology if needed. They provide training so that employees can use the software easily. They track employee's activities through software. Except for CVS, all other software has been developed by their developer team. Their recruitment process is fair. They have safe and friendly working environment. This bank is one of the oldest and largest banks of Bangladesh having 1212 branches all over the country.

CHAPTER 4: CONCLUSION

About two centuries ago, civilization took a radical turn on the wake of the industrial revolution. Change is again taking place in the 21st century because of ICT revolution. By becoming a part of this revolution, Bangladesh, as a developing country, has found remarkable opportunities to alleviate poverty. Proper use of information technology can lead to the achievement of expected skills. Technology can play a vital role in the eradication of corruption by bringing in transparency in the state machinery. Proper use of information can bring progress in all sector. It makes the task easier. It saves lots of time. People do not need to go banks or other places for the transaction. By visiting websites or using online software, they are now able to send and receive money. Organizations are now able to control their other branches easily and properly. Level of corruption, dishonesty etc. can be decreased by using information system. In this modern world, it is not possible to do anything without using information system. If any organization does not use IS, it will not exist. For operating all tasks properly, it is bound to use the software.

As organizations need to use software, they should have employees having proper training. Except for proper skill, no one will be able to use this software which will be wastage of money. For serving purpose and success of organization it is really necessary to use the software properly. So, every organization must provide training and ensure that all employees are getting proper training. If the information system is used properly, goals of organizations can be achieved and economy of our country will develop.

CHAPTER 5: REFERENCES

- [1] <https://www.wired.com/insights/2014/07/data-new-oil-digital-economy/>Data Is the New Oil of the Digital Economy, last accessed on 20-04-2018.
- [2] <http://www.businessdictionary.com/definition/information-system.html> Information System, last accessed on 20-04-2018.
- [3] <https://tcf.ua.edu/AZ/ITHistoryOutline.htm>- A History of Information Technology and Systems last accessed on 21-04-2018.
- [4]<https://bizfluent.com/about-5444925-history-management-information-systems.html> -The History of Management Information Systems, last accessed on 21-04-2018.
- [5] <http://www.uh.edu/~mrana/try.htm> -Information System Design, last accessed on 21-04-2018.
- [6] <https://www.sonalibank.com.bd/> -Sonali Bank Limited, last accessed on 21-04-2018.