

Chapter 1

Recognition of Need

1.1 Introduction

In this paper we are going to make an analysis on the prevailing system of Rajshahi education board.

The Board of Intermediate and Secondary Education, Rajshahi was founded in the year 1961, which led to creation of a separate education zone in the northern Bangladesh (erstwhile East Pakistan) from administrative and educational control of the Dhaka Education Board at the Secondary and Intermediate level of education. In pursuance with the Presidential proclamation of the 7th October, 1958 the Governor (of the so called East Pakistan) was pleased to make and promulgate the ordinance of 1961 vide no. XXXIII-1961. This ordinance is called the Intermediate and Secondary Education Ordinance 1961.

According to the East Pakistan Intermediate and Secondary Education Ordinance, No. XXXIII of 1961 and its amendments No. XVI of 1962 and No. XVII of 1977, the Board is responsible for organization, regulation, supervision, control and development of Intermediate and Secondary education, holding public examinations (both S.S.C. and H.S.C. examinations) holding control on secondary and higher secondary institution and promotion of the interest of students and teachers in a healthy academic atmosphere. As an important agency of the Govt. Board's purpose is multiple and widespread in rationalizing the vision of the Govt.'s educational policy and ensuring its implementation within its assigned jurisdiction.

1.2 Objectives of Education Board

- To enhance the quality of education and proper evaluation of merit of all the students of Rajshahi Education Board.
- To ensure the quality of the examiners.
- To maintain proper timing for publishing result.
- To maintain the confidentiality of the files and documents of different educational institutions as well as students.
- To lessen the burden of students in case of drawing their lost documents.
- To ensure proper security of the Board exam related aspects.
- To ensure the proper maintenance of admission process in higher secondary level.
- To ensure the proper quality of exam materials.

1.3 Vision and mission of the organization

- Digitalization of all documents within 2021.
- To enhance the quality of online services.
- To make the procedure of publishing result faster.
- To make the admission in the higher secondary level easier by implementing online admission process.
- To make the payment process of examiners more effective by online banking.
- To provide a modern and standard education system to keep pace with modern world.
- Lessening the dependency of board on third party organizations

1.4 Problem Identification

1.4.1 Lack of manpower

It was observed that the organization has limitation of its manpower. The organization has to perform a number of operations like: preparing question paper, evaluating them, performing registration of students, keeping records, performing administrative duties of the teachers, processing higher secondary admission of students and some other operations. But it was quite clear that the organization has a shortage of manpower. It depends on government organizations like: ministry of education, ministry of home affairs, police department, Teletalk and some other non-government organizations like software firms to perform their tasks. Moreover, people need to have service of this organization in case of lost certificate or doing affidavit or teachers come here to process operations of their organizations' different aspects like payments, scholarship of their students, committee permission and many more. But it was understood that the people coming here to receive services are not satisfied with the pace of the work here. It was found after some brief observation that the main reason behind this problem was the lack of enough manpower in the organization.

1.4.2 Lack of digitalization of documents:

One of the most important issue for the Education board is that, various records and documents are not digitalized. Hence there is often difficulties to check a record and finding a document. Though the currently data are being kept in the computers but there is huge amount of data of many years which need to be recorded. Also, there is need of more expert computer operators as well as hardware tools to record them.

1.4.3 Not having own server

The online result publication requires technical support. But the board don't have its own server. Hence for result publication system it heavily depends on third party. But result publication is a must doing process for the education board. If it buys a server for its own, this can reduce the reliability on other and the cost that is made each year for hiring third party.

1.4.4 Dependency on third party organizations

The Board of Intermediate & Secondary Education, Rajshahi has a vast dependency on third party organizations to perform some specific tasks. For example: to prepare OMR sheets of examinations, to prepare identification forms for students during examinations, to process results of different board examinations, to publish online results and many more. But depending on third party have a great issue in confidentiality of the operations of the organization. The board hires third parties to prepare OMR sheets of examinations as well as preparing identification sheets of answer scripts of a student. The board has no capability to perform these by their own. But the problem is, is the privacy may not be safe enough. Although theoretically the method they use is anonymous and encrypted, question is still there if they have enough transparency or whether they maintain the confidentiality of the information of the students or about their accuracy in

performing these operations or about their fault tolerance. It is also understood that board sometimes deals with these organizations having the conditions that as faster the process is completed, the higher the amount of money. That means if they did process 5000 answer scripts a day, the board asks them if they can process additional 1000 scripts a day. If they can, then the amount of money the third parties get will be increased. It's not quite clear whether third parties do the task with enough cautionary to have a better dealing as board has no direct control over these parties. Moreover, third parties demand a large amount of money to process these. It puts the students as well as the government some extra burden of money.

The board also depends on third party (Teletalk) to publish results on internet. Although it is a state-owned organization so it has better understanding as well as better reliability issue but it has limitations also like in processing the queries.

1.4.5 Lack of time for proper evaluation of scripts

A huge number of students participate in the exams JSC, SSC and HSC exams every year. The board requires to publish result as soon as possible. Hence a very limited time is available to judge the scripts. The board gives timeline of 7 days to the examiners to evaluate the scripts as no. of examiners are not that much with the proportion of students. Hence the examiners don't get so much time to evaluate the scripts with proper concentration. This quickness may affect the judgment of the scripts. Hence there is requirement of more examiner.

1.4.6 Harassment to retake transcript

The board doesn't have a proper planning for transcript distribution if it is lost as the probability of losing transcript is very less. But the user has to go with a long process and it sometime becomes very much irritating for the user. If the user could take transcript from the school and board could give them that opportunity that would become more user friendly.

1.4.7 Not having own examination center

This education board is not having their own examination center for public exams. Though not only this education board but also in our country no education board is having their own examination centers for SSC and HSC or any other public examinations. Previously this was not considered to be a big issue because the number of students were less and the competition among the institutions were hard to see but this is an age of competition. Everyone is competing with each other. As on one side the number of students increased similarly on the other side the number of schools, colleges, madrasa etc. also increased at a same rate. Now-a-days, the guardians are so conscious about the matter of education for their offspring. They always try to get their children admitted in a reputed school or college or madrasa. People judge an institution whether it is reputed or not by the public exam result of their student. That's why, these educational institutions are trying heart and soul to uphold their reputation and dignity. The authority of these institutions leave no stone unturned to bring overall good result for their institution. Even they try some unethical way too. There is a rule from the administration of respective districts that the students of one school will have their exam seat in another school. That means there will be an exchange

between schools. The exam guards will be provided from different schools but the main guards will be from the center school. Apparently, this was a very nice way to maintain transparency during public exams. Because if the students appear at the public exam in their own institution then there is a huge chance of corruption by their teachers and authority as every institution wants that their students do the best result in the exam. Since this kind of corruption like helping students during exams by the teacher cannot be done so the institutions made another way to trap the other institution like they misbehave with the examinees of another institution in the exam hall so that the students cannot fully concentrate on their exams. Even sometimes the invigilators of the center use to threaten the examinees. The center school teachers also try to create problems during practical exams. These are the scenario in maximum exam center during public exam now-a-days. For this the ultimate sufferers are the innocent examinees who prepared themselves for the exam whole day and night for all years. So, to make the public exams neutral the centers from board are required. Because education board is a neutral institution.

1.4.8 Having few OMR machine

OMR or optical mark reader sheets are used for putting student information above exam script as well as answering the multiple-choice questions. It became very popular process which reduced the wastage of time and maintained the confidentiality of student information. Before 1994 it was very easy to know the identity of the owner of exam script. To prevent this binary coded encrypted script cover was introduced in 1994. But at that time government handed over the responsibility to print this OMR sheets with binary coded encryption to foreign companies. In 2001 the government thought to make contract with Bangladeshi companies. Though at that time there was created many problems. But eventually from 2004 this system is going on smoothly. At present, four companies of our country use to provide the facility of OMR machines. They have 14 machines which check these sheets. There is no problem with the accuracy of the checking through these machines. But the number of students are increasing day by day and there are at least 10 subjects in each exam for which the OMR sheets are to be checked. It is becoming very vital to publish the result on time and if it is possible then to reduce the time limit. That means it is even far better if it is possible to publish result within a shorter time instead of 60 days. Board is fully dependent on outsiders on these matters. The companies only provide the machine but the checking of OMR sheets that is both the multiple-choice answer scripts and student information matching is done by the third parties. If there is any problem with the machines then there will be delay resulting a huge pressure on board.

1.4.9 Offline payment system and low allowance

Teachers of different institutions are appointed as the examiner of the answer scripts. The interested persons have to apply online to the respective boards. Then board selects examiners among the applicants. Previously it was a time consuming offline system but recently it was developed to online application system. Board offers some allowance to the examiners for their dedication. Till now this payment could not be converted to online system. Still board sends bank check to the examiners and scrutinizers. As usual it is very lengthy process so the examiners and the scrutinizers are not getting their allowance timely. The offline payment process is taking almost one year time. Since the examiners and the scrutinizers are not getting their payment timely

so they are losing interest to be examiners. For checking one answer script of a SSC examinee an examiner gets eighteen taka which is a low amount for an examiner.

1.4.10 Question out

Now-a-days, question out becomes a vital issue during public examinations. The board has very limited authority on any exam process after it goes to the examination center. The board assigns teachers to prepare questions, teachers prepare questions and board sends them to BG press for printing. After BG press does printing, questions are then go under the authority of local administration. The administration then distributes the questions among examination centers. So, it is very clear that the board has so far very limited authority over examination process. But board cannot deny the responsibility. It seems a faulty idea that the board has such little influence over the examination process.

1.3 Conclusion

Rajshahi education board is a very well reputed organization. They have a very clear mission and vision and they are very much keen to reach their goal. As we are analyzing on the existing system of this organization we have found some problems and the problems were identified by conducting preliminary survey. Still we are not so sure whether these problems could be solved or not. Because there are so many considerations before proposing a candidate system. But even then we will make an initial feasibility analysis on these problems. We will try to find some way out to solve the given problems. In the next chapters we will go through sequential stages trying to solve these problems.

Chapter 2

Initial Feasibility Study

2.1 Introduction

As the name implies, a feasibility study is used to determine the viability of an idea, such as ensuring a project is legally and technically feasible as well as economically justifiable. It tells us whether a project is worth the investment-in some cases, a project may not be doable. There can be many reasons for this, including requiring too many resources, which not only prevents those resources from performing other tasks but also may cost more than an organization would earn back by taking on a project that isn't profitable or simply the required budget for the project exceeds the available budget of the organization.

We do the feasibility study answering some important questions. These questions are:

- What are the user's demonstrable needs and how does a candidate system meet them?
- What resources are available for the candidate system? Is the problem worth solving?
- What are the likely impact of the candidate system on the organization? How well does it fit within the organization's MIS plan?

2.2 Initial feasibility study

2.2.1 Lack of manpower

The board has to process a lot of tasks to manage the educational process in Rajshahi region. But to perform these operations they don't have enough manpower which causes unwanted delay. The board can recruit more employee to solve the problem.

The people who come to board to have services want a faster service. They also want a reliable, transparent, quality service from board. It is not expected to come for several times to the board to perform an affidavit or to have a lost certificate or having a payment. Due to lack of enough manpower very often these processes take lengthy time period.

These processes may be performed online. It's not necessary to perform all operations on internet but certain processes like application, payment, having duplicate copy can be performed online. This may reduce the scarcity of manpower in the organization. Moreover, the board should recruit some more employee to increase the service quality. Having enough employees in technical portion of the organization, having more analysts in the organization, increasing security, having branches in different places, having own administrative power when needed (such as during examination in exam hall), increasing sections regarding their area of work. If these recommendations can be done by the board, the organization can play a better role to provide service to the students, teachers and other professionals who comes here to have services. Moreover, increasing manpower it can also be helpful to ensure the better quality of education.

2.2.2 Lack of digitalization of documents

All the modern organizations are getting digitalized. Like other organization Rajshahi education board is also willing to computerize all the records. But as there is huge amount of data it is really difficult to digitalize them. The board can hire a reliable third party like IT organizations to help them with this issue.

Rajshahi education board is one of the oldest education board of Bangladesh. Hence recorded data of the board is also huge. This is the era of digitalization. Hence the board is also willing to computerize its records. But the difficulty is huge no. of data as well as lack of manpower. The board requires more IT specialists to maintain the current database properly. It also requires more storage to records the data of the previous years which were not recorded. The previous dataset is huge as there are records of many years. Actually, it is very difficult to computerize all the data. Hence the board can choose a threshold year and start the process of previous data digitalization. The lack of manpower and technical engineers can be solved by hiring reliable third party like IT organization who deals with bigdata. This will require a good amount of funding and budget. But the effectiveness of digitalization is also so great. To cope up with the modern era this is a must requirement for any organization.

The board should choose a threshold year as soon as possible to start computerization of data from that year. It should increase the no of computer specialists. The size of database also need to be increased and more modern machineries should be bought. It should take necessary steps to hire third party to computerize the previous records.

2.2.3 Not having own server

To publish exam's result, the board depend heavily on third party for not having own server and technical people. Result publication is one of the most important work of the education board. It should try to lessen dependency on this matter on the third party by getting own server and technical stuff.

The result publishing process is very important and sensitive. If the server falls for any reason, people blame the education board rather than third party. Hence in this case the board should take a step to publish result by their own. It should create a technical section for result publishing and buy the necessary tools to publish result by itself.

The board should take necessary steps to have its own result publishing system if it has sufficient budget. If it seems costly it can take longer plan about them.

2.2.4 Dependency on third party organizations

The education board performs a lot of confidential works and stores various data about students as well as information about educational institutions. The security of these data must be preserved otherwise questions may arise concerning the transparency of the system. The board must lessen the reliability on third party organizations by increasing the capability of their own organization.

People who requires service form this organization wants a reliable service so that their confidentiality is protected. This organization deals with a lot of personal confidential information

about people or educational institution. So, information must be kept safe so that no unauthorized entity can have information. But relying on third parties may hamper this vision.

So, the education board should be made less dependent on using resource from third parties. They can construct their own technical support. They should also have their own IT support team to provide online services to the clients and students. The organization should its own servers and proper technical support to maintain the server as well as database. Different technical universities (like: RUET) may help them to build a reliable digital system like a customized encryption system. If these recommendations are fulfilled, people can have a better service as well as confidentiality issue can be solved. Moreover, the quality can be better in judging answer scripts of the examinees can be assured. Government can also save a great amount of money invested upon the third party companies.

2.2.5 Lack of time for proper evaluation of scripts

Time can't be extended as the student will remain idle if the result publication is late. But if the number of examiners can be increased the proper evaluation can be made. More examiners can be trained to handle this problem.

The problem of limited time is related with some important issues. The board can't publish result later because admission to the next stage for a student is related with this. A student can't be kept idle for a long time. Hence alternate solution to maintain quality of script's judgement is increasing the number of examiner. Education board itself doesn't provide any training program. It depends on the ministry of education for this kind of purpose.

The board should consult with the ministry of education for taking more training program to increase the number of examiners. To increase the participation of the teachers in the training programs, the board can increase the money for evaluating each script. This can be a great inspiration for the teachers, who are not examiners, to participate in the training programs and evaluating scripts as an examiner from the next.

2.2.6 Harassment to retake transcript

The process of retaking transcript from the board has no proper distribution planning to make it user friendly. Hence the user often need to get irritated with the process. The school can play an important role to solve this problem. As transcript can be an online document after digitalization and the process of digitalization has started little and it will for surely extend, this can be sent to school online. But, here comes the security issues. This problem can also be solved as biometric process is also introduced across the country. The Principle of colleges and Head teacher of schools can take the responsibilities of distributing those documents to the students as a middleman.

The board office has so much work to handle. The little issues like transcript recovery is sometimes so much irritating both for the employee of the board office and also for the user. Documents like transcript can be distributed from schools and colleges by means of internet. The corresponding user will make contact with his school or college to take them if lost. This will make the process more user friendly. The verification is a vital issue in such cases. But our country is being introduced with biometric registration currently. Hence it can play an important role to solve the

problem of the security. The principle of college or Head teacher of school will take the responsibility with their biometric information saved in the government data base.

The board can consult with the government about using biometric information to make secure online communication with the educational institutions and make some service more effective and easier.

2.2.7 Not having own exam center

It has been already stated that the number of students are increasing day by day and having own center of respective board for millions of students is not a piece of cake. Well, it is better to mention that having own exam center does not mean board must have own building for center. They can use the buildings different institution but the main authority of that center will be appointed from board. The institution authority will have no say here regarding exams. For sure it will be a very tough and challenging job for the board.

Even then it is possible if board consults this issue with education ministry and government. Board has to motivate the government and ministry regarding this. If government allows the issue of having own neutral exam center for board then this problem can be solved and the sufferings of the students can be reduced. But to maintain transparency it is not enough to have own exam centers only. The board has to ensure that their center is under close surveillance. So that no student, teacher, invigilator can spoil the environment by corruption. Government and ministry have to provide facilities for this so that board can do the job smoothly.

If board becomes strict about the surveillance then the security also can be maintained. So, it is now clear that if government and ministry of education help the board then having own exam center for public exams is possible.

2.2.8 Having few OMR machine

As it is told earlier that there are only four companies in Bangladesh who provides the OMR machine facilities and board is fully dependent on third parties on OMR checking issue.

So, it seems that if board becomes independent in this issue then it would be better. But the fact is not like that. If board appoints some internal people to do this job it increases the total cost. The authority of education board has a fear that they cannot rule over the internal people. That's why they do not appoint internal people for this job rather they hire temporary people from outside so that their money and time both are saved.

Again, regarding the increment of OMR machine, if government and ministry want that the number of OMR machine are to be increased so that the time for checking the sheets will reduce then it is possible. For that board has to convince ministry of education and has to request the government to add more OMR machines.

If the number of OMR machines can be increased then the board will be one step ahead to be able to publish result in a fewer days than before.

2.2.9 Offline payment system and low allowance

Payment system can be made online easily coordinating with a bank. Board is trying to convert the payment system online. But it is in testing phase. If it can be done online then examiners will get their allowance timely and will be more interested in this field and will evaluate the answer script with more enthusiasm.

The low allowance problem can also be solved but the board has to motivate government to cooperate in this regard. Actually, the payment for the examiners come from the registration fee of the students. So, if board wants to increase the examiners allowance then they will have to increase the registration fee of the students. But instead of that if government provide the extra money for the payment then the allowance can be increased.

By this the teachers will be inspired and board will get proper evaluation of the answer scripts. Ultimately whole nation will be benefitted.

2.2.10 Question out

Question out has become a concern among students, guardians, teachers. It hampers ensuring proper evaluation of the students. The education board may work jointly with the ministry of education as well as public administration.

To ensure the proper education of a nation a proper evaluation of merit must be ensured and examination is the best way to do the evaluation. So, fairness in examination must be ensured. If any unfair activity happens during examination people loses trust over education system.

As the organization is in such a governing position of ensuring education it has a responsibility to perform this duty. The board can arrange an online system to take examinations so that question paper may be supplied to the corresponding local administration before a reasonable amount of time using online medium. The board can cooperate with the administration to prevent this from happening. The board may have their own exam center to take examinations where they can provide better security to prevent this. If the question out can be prevented this will be helpful to prevent corruption as well as fair evaluation of students.

2.3 Conclusion

The problems we have identified before we have tried to give some solutions in this chapter. We have done the initial feasibility study by which we can understand whether we can proceed with the problems or not. We have seen in this study that the problems we have found so far are not infeasible at all apparently. The problems seem worth solving. To solve these problems, the organization needs sufficient budget, time, manpower and technical support. Though still we can't be very much sure that the problems can be solved properly. We have to analyze more deeply to understand the situation and then finally we can assure that the identified problems can be solved.