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Report 02

Feasibility Study Report

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Feasibility Study Report

SchoolHub

1. Introduction

Digitalized communication system of parents and school authorities is a fundamental issue for every educational institution. In this regard, manual communication way (Face to face conversation or using mobile phone) is not efficient for this. The process of communication, and academic information preservation of students' such as examination results, students class performance, shortcomings, co-curricular activities is tedious, time-consuming, and error prone, most especially when not automatically handled and or when large number of students are involved. The increase in students' population over the years has made the work of School Committee and parents as well as other personnel in charge of processing students' all academic information is very annoying exercise. These processes are to be carried out every class day and students overall performance may be updated any time. Consequently, it keeps the operators in an continuous and ever challenging cycle. Except for the use of an accurate and effective system, manual communication way have tendency to convey misleading information to parents. Hence, there is need to provide better and efficient alternative means of processing, preserving and displaying students' academic records, their daily activities performance that is reliable than the traditional method currently in used within the manual communication system.

The feasibility report is summarized through 7 sections. Section 2 describes the background of the study. The outline of school app processing system is discussed in section 3. Section 4 describes the methodology used for the study. The complete overview of the alternatives are described in section 5. Section 6 gives conclusion to the study. The recommendation based on the study is given in Section 7.

2. Background

Accuracy and efficiency of giving information, measuring of student class performance and presenting of students' results and information have been major requirements of every institutions and educational establishments since their creation. However, this has posed several challenges and barriers to both students, teacher and parents. The current **School App Processing System** provide students' information with high accuracy and produce inconsistent outputs, thereby making data integrity a big challenge. Also there are huge gap between current communication system and modern communication system is to process the communication way effectively and efficiently. That's why, we study to propose a computerized system to make the system robust, more efficient and thus reducing the gap between parents and teachers.

3. System Outline

The **School App Processing System** is a system to make the parent and teacher communication way robust, reliable, efficient and cost effective. The complete outline of the project is described in Table 3.1:

Table 3.1: System Outline

Serial No	Item	Description
1	Users	1. School authority 2. Parent
2	Existing Problems	1. Time consuming and not user friendly 2. Requires huge manpower 3. Scope of absence and delay information 4. Lack of security against intruder 5. No effective scope for updating information. 6. Process is not cost effective.
3	Reason of Problems	1. Lack of manpower. 2. Lack of verification. 3. Information are pass manually. 4. Information are stored in pen and paper. 5. Results are hand written in record book. 6. School authority can not easily interact with parents about update notice.
4	Performed Tasks	1. Assigning database for every student. 2. Distributing information among the parents. 3. Keeping track of unique id against individual student . 4. Collecting the information of individual student. 5. Integrating the overall student performance. 6. Calculating student rank. 7. Producing notice based on academic system. 8. Keeping track of students information updating .

5	Required Data	1. Students' personal information. 2. Students' academic information. 3. School authorities information. 4. Students' cultural performance. 5. Previous record of results.

The logical model of the system is shown using DFD (Data Flow Diagram) in figure 3.1:

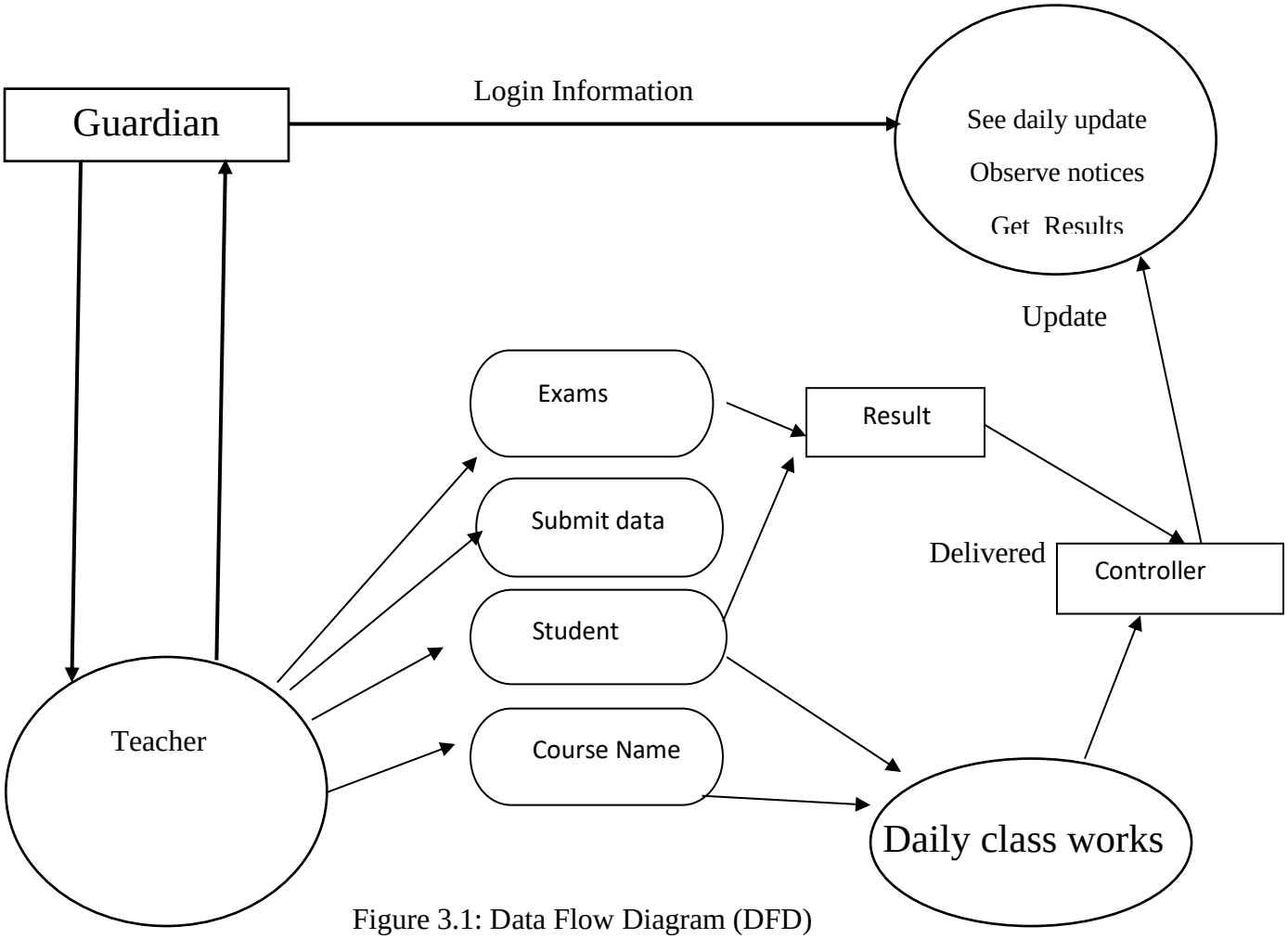

Figure 3.1: Data Flow Diagram (DFD)

4. Methodology

Feasibility study will help to determine whether to proceed with the project or not. It will also determine if the problem is worth solving by considering the economical, technical and operational aspects. It also helps to determine which alternatives should be taken to produce most benefit using least expense. It will also make recommendation among proposed alternatives. There are three methods of analysis for feasibility study namely - Economic feasible study, Technical feasible study and operational feasible study.

By studying technical feasibility, we were able to know that if the required technology to implement the alternatives is available or not. We were able to determine if the required human resource is available to operate the system, by studying operational feasibility. The economical feasible study we were able to predict the profit based on present investment. The technical feasibility study and operational feasibility study were conducted in following manner:

i. We sent a team of expert to observe the current communication way and talked with parents and teachers.
ii. We held an interview with the chairman of the authority.
iii. We observed the workstations and servers available.
iv. We gathered knowledge about the culture, union agreement and rules of the school.
v. We also talked with the students, parents and teachers and held an survey with the help of questionnaires.

For the economic feasibility study, we do a financial analysis to compute the future benefit for the investment of the project by using the following formula:

$$\mathbf{P} = \frac{\boldsymbol{F}}{(\mathbf{1}+\boldsymbol{I})^{\boldsymbol{n}}} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Here P, F, n, I are present value, future benefit, year of benefit & expected rate of return, respectively.

On the basis of clients' requirements, possible alternatives are proposed and then three types of feasibility study are analyzed on each alternative ways.

5. Overview of Alternatives

A problem can be solved in many ways. Similarly, the problem of the existing communication system can be solved in various way. By studying the current system we propose three alternatives to the current system to make the current communication System more reliable, efficient, robust and cost effective. They are – (i) Proper task scheduling and record management. Maintain records, manage student attendance and track student performance, improve communication with guardian.

(ii) Appoint more employees and taking proper steps to remove laziness of employees.(iii) Replacing the current communication way with a computerized and social networking system

A brief description of the alternative systems are shown in Table 5.1:

Table 5.1: Description of Alternatives

Item	**Alternative 01**	**Alternative 02**	**Alternative 03**
Data Input	Manually	Manually	Computerized
Data Entry	Manually	Manually	Using school app
Required Extra Hardware	Android app	None	None
Advantages	Least costly approach	Not necessary to use modern technology	Essential information can be done quickly and easily.
Disadvantages	Need face to face communication	Requires more manpower	Very costly to maintain

5.1 Economic Feasibility study for the alternatives:

Initial investment needed for alternative 1, alternative 2 and alternative 3 is shown in table 5.2, table 5.3 and table 5.4 respectively:

Table 5.2: Summary of cost for alternative 1

Serial No	Item	Amount (BDT)
1	Appointment employee	5,00,000
2	Initial Arrangement	10,000
3	Maintenance	10,000
4	Arrange meeting cost	80,000
5	Accommodation	30,000
6	Communication cost	20,000
7	Other facilities	10,000
	Total	6,60,000

Table 5.3: Summary of cost for alternative 2

Serial No	Item	Amount (BDT)
1	Salary of employee	3,00,000
2	Advertisement	10,000
3	Interview	80,000
4	Viva	30,000
5	Appointment	20,000
6	Others facilities	20,000

Total	4,60,000

Table 5.4: Summary of cost for alternative 3

Serial No	Item	Amount (BDT)
1	Application Software Development	1,00,000
2	Workstation PC	80,000
3	Database Server	30,000
4	Initial Data Entry	20,000
5	Web Server	40,000
	Total	2,70,000

Financial Analysis of Alternative 01:

The investment of Alternative 1 is BDT 6,60,000 BDT which is one time initial cost. Benefits and costs on yearly basis is described in Table 5.4:

Table 5.4: Benefits and Cost for Alternative 1

Benefits			**Cost**		
Sl. No.	**Particulars**	**Amount(BDT)**	**Sl. No.**	**Particular**	**Amount(BDT)**
1	Better Service	3,00,000	**1**	Maintenance and Stationary	1,75,000
			2	Data Entry	5000
Net return per year(300000 – 175000 – 5000)					1,20,000

On the basis of table 5.4 investment analysis for Alternative 1 is shown in table 5.5.

Table 5.5: Investment analysis for Alternative 1

Year	**Saving(Lakhs BDT)**	**Present Value (at 12%)**	**Cumulative Value**
1	1.2	1.07	1.07
2	1.2	0.96	2.03
3	1.2	0.85	2.88
4	1.2	0.76	3.64
5	1.2	0.68	4.32
6	1.2	0.60	4.92
7	1.2	0.54	5.46
8	1.2	0.48	5.94

9	1.2	0.43	6.37
10	1.2	0.38	6.75

Financial Analysis of Alternative 02:

The investment of Alternative 2 is BDT 4,60,000 BDT which is one time initial cost. Benefits and costs on yearly basis is described in Table 5.6:

Table 5.6: Benefits and Cost for Alternative 2

Benefits			**Cost**		
Sl. No.	**Particulars**	**Amount(BDT)**	**Sl. No.**	**Particular**	**Amount(BDT)**
1	Better Service	2,50,000	**1**	Maintenance and Stationary	1,25,000
			2	Data Entry	10000
Net return per year (250000 – 125000 – 10000)					1,15,000

On the basis of table 5.6 investment analysis for Alternative 2 is shown in table 5.7.

Table 5.7: Investment analysis for Alternative 2

Year	**Saving (Lakhs BDT)**	**Present Value (at 12%)**	**Cumulative Value**
1	1.15	1.03	1.03
2	1.15	0.92	1.95
3	1.15	0.82	2.77
4	1.15	0.73	3.50
5	1.15	0.65	4.15
6	1.15	0.58	4.73
7	1.15	0.52	5.25
8	1.15	0.46	5.71
9	1.15	0.41	6.12
10	1.15	0.37	6.49

Financial Analysis of Alternative 03:

The investment of Alternative 3 is BDT 2,70,000 BDT which is one time initial cost. Benefits and costs on yearly basis is described in Table 5.8:

Table 5.8: Benefits and Cost for Alternative 3

Benefits			**Cost**		
Sl. No.	**Particulars**	**Amount(BDT)**	**Sl. No.**	**Particular**	**Amount(BDT)**
1	Better Service	1,75,000	**1**	Maintenance and Stationary	30,000
			2	Data Entry	15,000
Net return per year (175000 – 30000 – 15000)					1,30,000

On the basis of table 5.8 investment analysis for Alternative 3 is shown in table 5.9.

Table 5.9: Investment analysis for Alternative 3

Year	**Saving (Lakhs BDT)**	**Present Value (at 12%)**	**Cumulative Value**
1	1.30	1.16	1.16
2	1.30	1.04	2.20
3	1.30	0.93	3.13
4	1.30	0.83	3.96
5	1.30	0.74	4.70
6	1.30	0.66	5.36
7	1.30	0.58	5.94
8	1.30	0.52	6.46
9	1.30	0.46	6.92
10	1.30	0.41	7.33

5.2 Technical Feasibility study for the alternatives:

Our alternative systems need only a computer which is already available to everyone. So, all of the alternative systems are technically feasible.

5.3 Operational Feasibility study for the alternatives:

All of the alternatives are easy to use and user friendly. Also it is a robust system which protects the security of the data. So all of the alternatives are operationally feasible.

6. Recommendation

After analyzing the alternatives in different sectors like economical, operational and technical according to money and time constraints, we recommend the best one of them on the basis of different features. The comparison between alternatives to develop **School App Processing System** is illustrated in table 6.1:

Table 6.1: Comparison between alternatives

Serial No	Feature	Alternative 01	Alternative 02	Alternative 03
1	Investment	6,60,000 BDT	4,60,000 BDT	2,70,000 BDT
2	System Life Cycle	7 Years	All time	All time
3	Return Value	5,46,000 BDT	5,25,000	5,94,000
4	Payback Period	10 Years	Monthly	Monthy

From Table 6.1 we can say that alternative 3 (Application with manual data input and Answer Script Code entry) is more cost effective than any other alternatives. Also, Alternative 3 is more preferable than all other alternatives as it returns the investment in least amount of time. So, Alternative 3 can be taken up to continue the project.

7. Conclusion

Here we have proposed three alternatives-

Alternative 01: Proper task scheduling and record management. Maintain records, manage student attendance and track student performance, improve communication with guardian.

Alternative 02: Appoint more employees and taking proper steps to remove laziness of employees

Alternative 03: Replacing the current communication way with a computerized and social networking system

All of the alternatives are both technical and operational feasible. But by Economical analysis, we have found that, Alternative 3 is more beneficial than all other alternatives according to time and money. Also, it returns with a 3,24,000 BDT profit within system life cycle. So finally, we have preferred Alternative 3 for our project.