American International University-Bangladesh (AIUB)

Faculty of Science and Technology (FST)
Department of Computer Science (CS)

SDPM Group Project, Summer 2022

Project Title

A software model for building a successful e-commerce website in Bangladesh

Section: A

Submitted by

Name	ID
MD. SADATUR RAHMAN	16-32606-2
MD Rashedul Hasan	18-36318-1
LIKHON, MD.NAZMUL HASAN	18-38977-3
MAHDI MD MOHAIMENUL ISLAM	19-39845-1

1.0 Introduction:

In this project, we promote this e-commerce model, there are a few successful ecommerce business concepts worldwide, but not all of them are successful. And most importantly Bangladesh has no such business model on the basis of high success so far. This finding will pay attention to building a platform for economic development in Bangladesh. It is important for small firms to implement an e-commerce strategy that is suitable for the specific objectives that the firm sets. In the whole e-commerce system of our country of our as well as in worldwide, companies always focuses on the competitive tendency of selling rate by slightly manipulating each other's business models. But the business model is the key to maintaining their core competitiveness, and it is also the basis for providing customers with greater value and surpassing their competitors. This is obvious that, a unique business model for an ecommerce company, could make their sales rate increase and also make them a good competitor in the E-commerce marketplace.

2.0 Project Title:

A software model for building a successful e-commerce website in Bangladesh

3.0 Objectives:

Here you have to point out the overall objective and specific goals of your proposed software system. e-Commerce drives profitable growth by expanding customer reach, reducing cost-to-serve, and creating differentiated customer experiences. Utilizing this powerful tool wisely has become eminently important for business-to-business (B2B) companies. Looking at the current B2B environment, eCommerce has proven to be a disruptive force. More and more B2B companies are moving a significant portion of the buying journey online, and these buyers are increasingly expecting a similar eCommerce experience as consumers. Our goals are-

• Reduce administrative costs associated with order management and repurpose staff to add more value.

• Eliminate order errors caused by the manual ordering processes.

• Create process efficiencies that ultimately improve the customer experience.

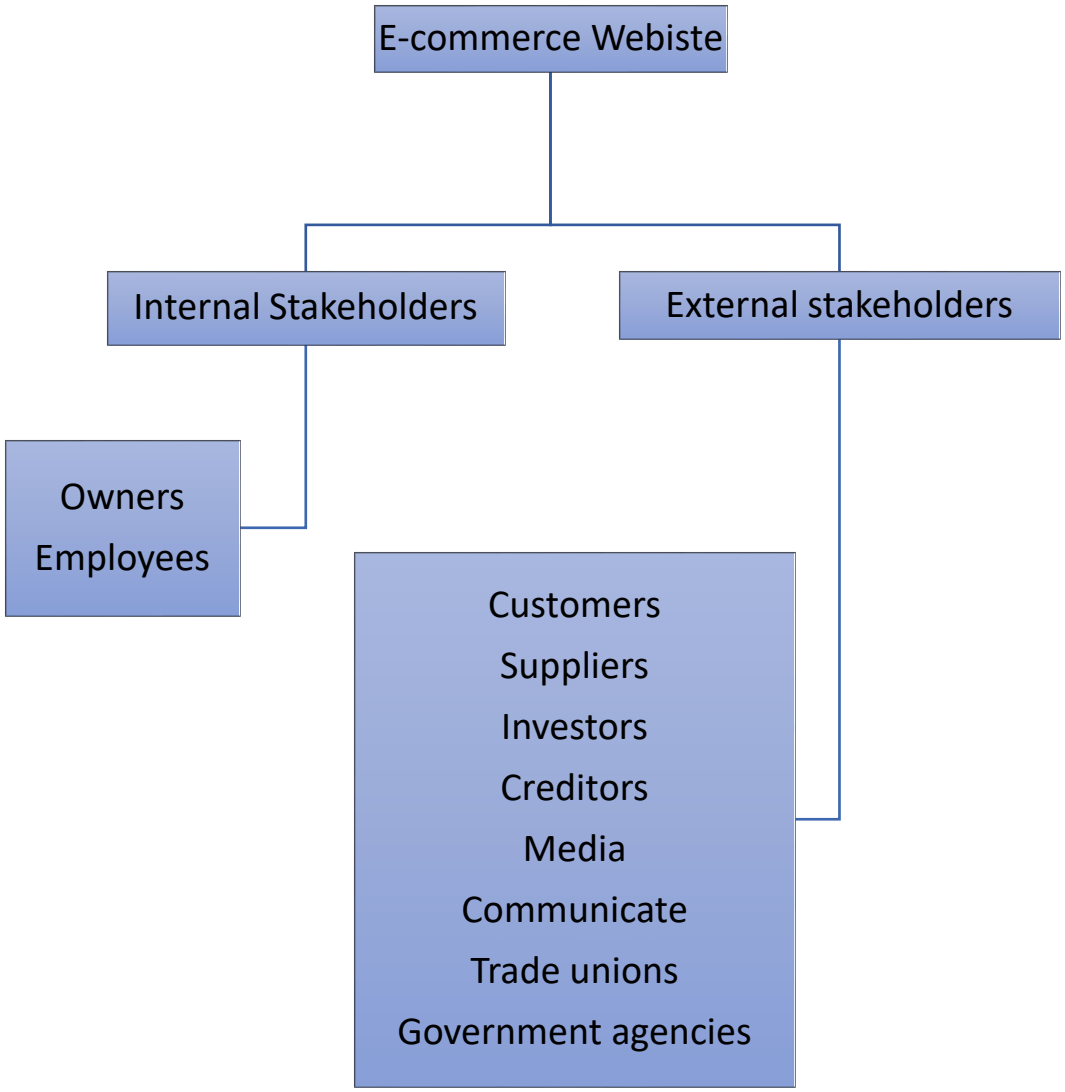
4.0 Justification:

Consumers can save money since operating an online store is less expensive than operating a physical one. One of the biggest benefits of e-commerce is this.Prices are often lower online than they are in physical stores, and e-commerce websites can offer additional discounts and promotions that are simpler to redeem

5.0 Systems Overview: (Includes Use case diagram)

6.0 Stakeholders analysis.

Here is the list of all stakeholders in e-commerce websites:

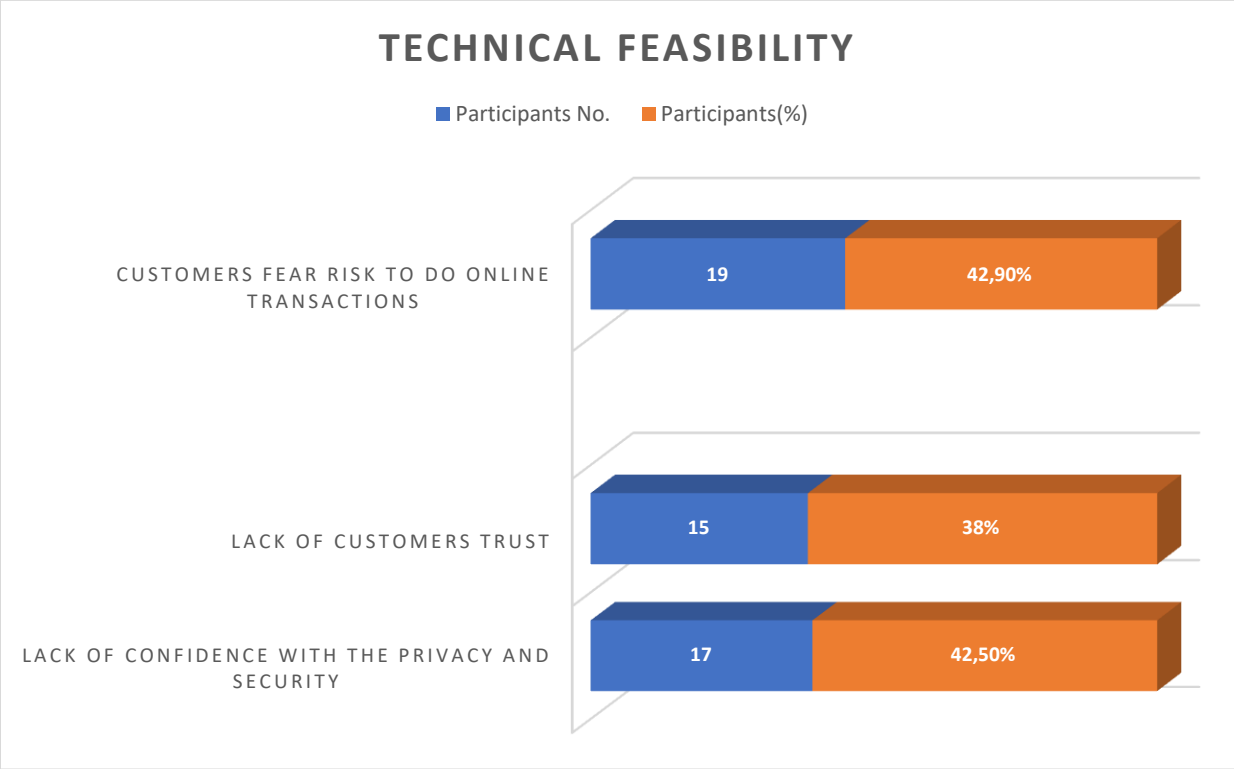


7.0 Feasibility study:

A feasibility study is a way to evaluate whether or not a project plan could be successful.

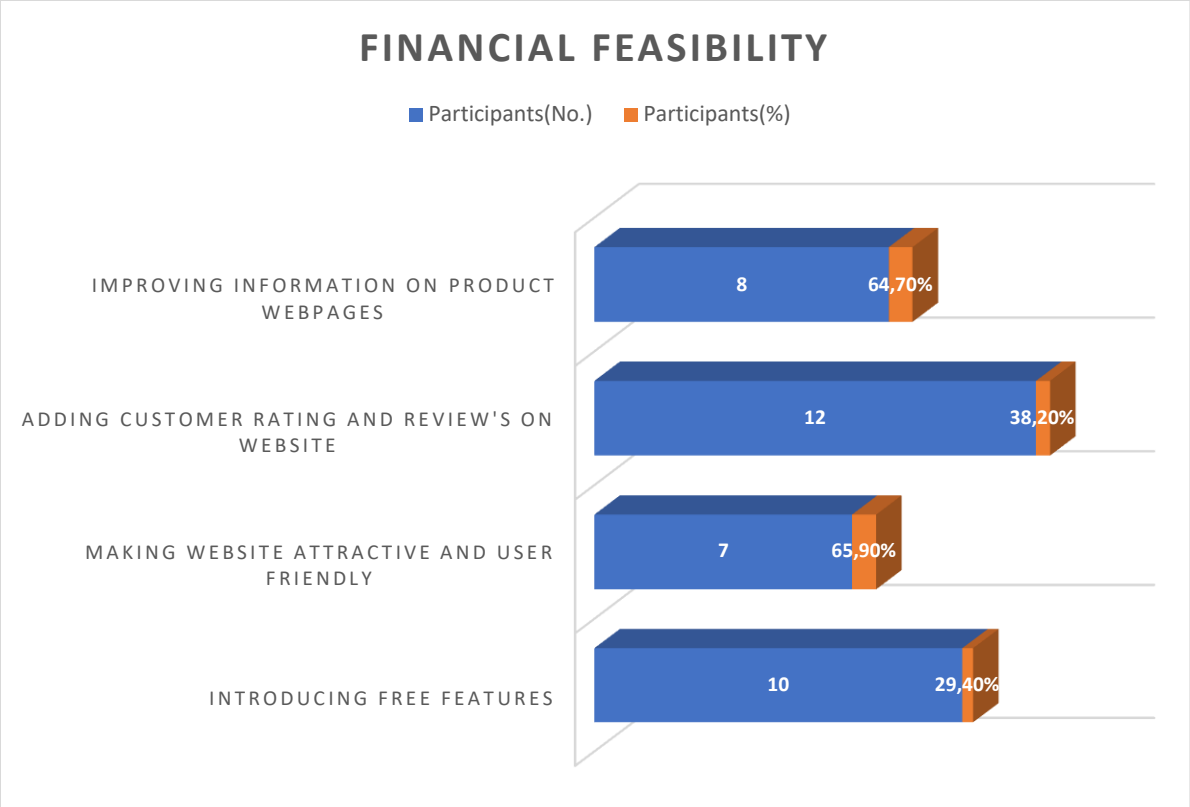
7.1. Technical Feasibility:

The system is said to be technically feasible if the assessment and the availability of technical things (hardware, software & network resources) can be ensured that may affect the ability to accomplish user requirements and thus to achieve an acceptable system.



7.2. Financial Feasibility:

Financial feasibility focuses specifically on the financial aspects of the study. It assesses the economical viability of a proposed venture by evaluating the startup costs, operating expenses, and cash flow and making a forecast of future performance.



8.0 Systems component:

Systems components for building a successful e-commerce website in Bangladesh:

1. User-friendly navigation
2. Product filtering, sorting
3. Product reviews
4. Special offers and discounts
5. Wishlist
6. Related products
7. Secure payment options
8. Shipping information (multiple shipping providers)
9. Online Chat

9.0 Process Model to be followed:

Agile methodology is widely used for web app development projects. The Agile method is often used for the projects with no definite requirements and limited short time frames. The agile process model encourages continuous iterations of development and testing. Each incremental part is developed over an iteration and each iteration is designed to be small and manageable so it can be completed within a few weeks. Each iteration focuses on implementing a small set of features completely. It involves customers in the development process and minimizes documentation by using informal communication. Agile development model consider the following:

- Requirements are assumed to be changed.
- The system evolves over a series of short iterations.
- Customers are involved during each iteration.
- Documentation is done only when needed.

10.0 Efforts estimation:

Every business has a budget and wants to know the costs before they're willing to begin a project. A project estimate is the prediction of how much time and money is needed to complete a project. Our project is a Organic type project because our software project and project team are relatively small and simple.

We use COCOMO Model for estimate the cost. The COCOMO (Constructive Cost Model) is one of the most popularly used software cost estimation models. It estimates or predicts the effort required for the project, total project cost and scheduled time for the project. According to COCOMO, there are three modes of software development projects that depend on complexity- Organic Project, Semidetached Project and Embedded Project.

Effort Estimation and Budgeting:

Project Type	Coefficient <Effort Factor>	P	T
Organic Project	2.4	1.05	0.38
Semidetached	3.0	1.12	0.35
Embedded	3.6	1.20	0.32

PM: Person-month needed for project

SLOC: Source Lines of Code

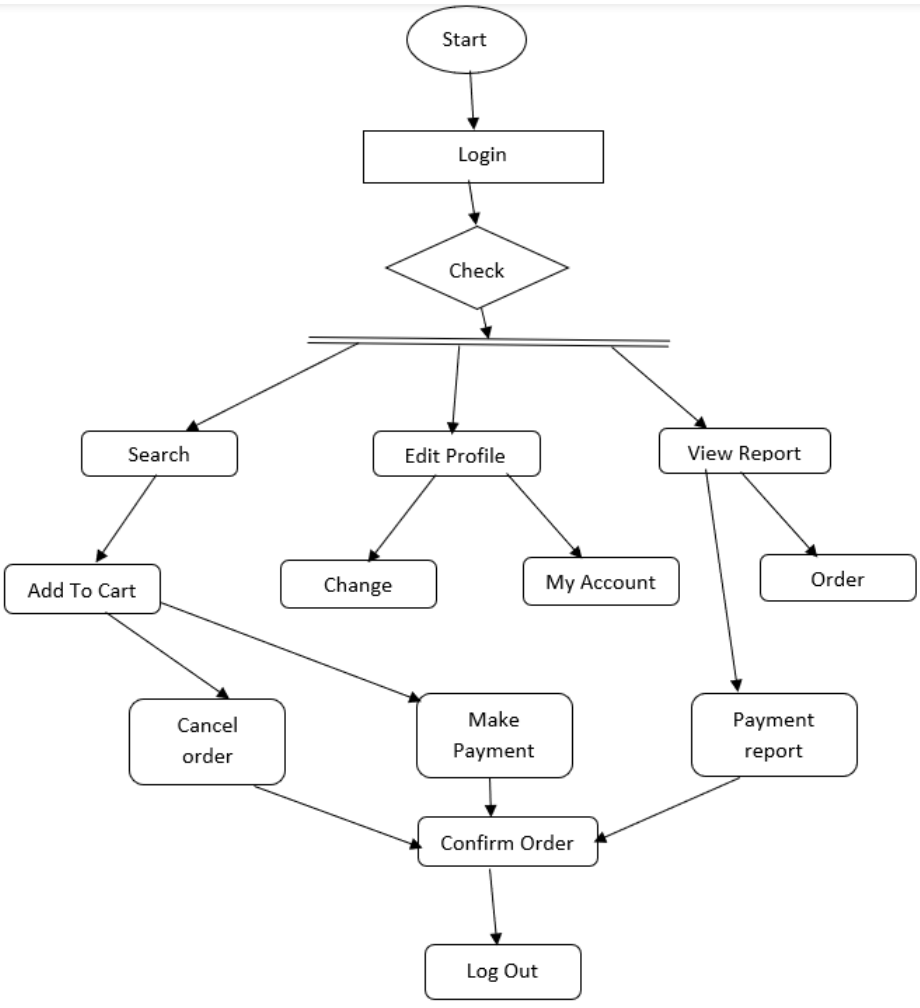
P: Project Complexity (1.04 – 1.24)

DM: Duration Time in a Months for a

Project T: SLOC Dependent Coefficient

(0.32 – 0.38)

11.0 Activity Diagram:



12.0 Risk Analysis:

Ref.	Hazard	Likelihood	Impact	Risk Exposer	Probability Level
R1	Code issues.	5	3	15	Moderate
R2	Aggressive deadline.	3	4	12	Moderate
R3	Unmet expectations.	3	6	18	High
R4	Defects in planning.	5	7	35	Significant
R5	Low Productivity.	5	5	25	Moderate
R6	Budget Issue	5	2	10	Low
R7	Poor risk management	8	1	8	Low
R8	Inadequate project management	4	8	32	High
R9	Scope creep	5	6	30	Significant
R10	Stakeholder issue	6	6	48	Significant
R11	Users respond	2	7	14	Moderate
R12	When project team members leaving	2	7	14	Moderate

13.0 Budget for the project:

Our total estimated budget is (13500000 + 2400000 + 720000 + 1200000) * 2 = BDT 35640000, which is

for 2-year period. Below is the detailed breakdown as per category.

13.1 Employee Salary Estimation

Among 23 engineers, we intend to have 8 senior and 15 junior personnel starting at respectively 35000

BDT, 75000 BDT a month. And as the project is of 3-month duration (including non-working days.

Salary for 1 month is,

08 * 75000 = 600000

15 * 35000 = 525000

Total = BDT 1125000

So, in a year, 1125000 * 12 = BDT 13500000

We are taking into account of 5 creative department employees that will handle tasks of graphics. Which

in a month,

5 * 40000 = BDT 200000

So, in a year 200000 * 12 = BDT 2400000

Our Marketing will be mostly virtual for first 2 years, so we will have 2 people watching over the

marketing stuff, which in a month,

2 * 30000 = BDT 60000

So, in a year, BDT 720000

13.2 Database and Cloud Services Cost Estimation

We will use MongoDB, MySQL for database and Microsoft Azure for our cloud services.

- MongoDB Atlas Dedicated BDT 5000 / month
- Microsoft Azure Database for MySQL BDT 7000 / month
- Microsoft Azure Web App BDT 6000 / month
- Microsoft Azure Blob Storage BDT 20000 / month
- Microsoft Azure CDN (To serve images) BDT 4000 / month

So, per year that is,

12 * 05000 = 60000

12 * 07000 = 84000

12 * 06000 = 72000

12 * 20000 = 240000

12 * 04000 = 48000

Total = BDT 504000

13.3 Marketing Cost Estimation

Ad on Facebook BDT 100000 / month

So, in a year that is BDT 1200000

13.4 Profit Analysis

In order to keep the business running, 5% royalty will be collected after each month from the agencies.

The royalty will be collected based on the total monthly income of the agencies registered in the application.

Furthermore, agencies will be able to boost their travel packages to appear on top of the search results. To boost packages, agencies would have to pay a little amount. Additionally, sponsorships could be managed from food companies which will earn us money.

14.0 Conclusion:

The open platform for our nation's e-commerce sector was the topic of our initiative. In order to help customers locate the solutions they need and to compare them with other businesses, we set out to build a platform where e-commerce owners could market their services. The components and relationships of the e-commerce ecosystem are described in this study in terms of sustainable development. By negotiating with logistics service providers for reduced cost-dependent charges, e-commerce should pay particular attention to sustainability. A retail business's main objective is to concentrate on economic returns in order to produce profits and revenues.

...