Feasibility Report

*Software Engineering Project*

21-01-2023

**Topic:**

A learning management system that allows teachers to create and share educational content and track student progress. (Web Development)

**Introduction And Executive Summary:**

**Problem Statement:**

The proposed educational management system is intended to address the growing need for creating, sharing, and uniting educational content along with tracking further progress of students, like marks, assignments, and attendance, and uniting these features, which is crucial for both students and teachers to keep track without hassle.

**Problems in the existing system:**

* Currently, the mainstream solutions available for the above-mentioned problems are scattered and need to be more specific.
* Google classroom deals with sharing educational content but has less focus on keeping track of students(attendance marks etc) or creating content.
* PARAKH, a new national assessment platform, is not customized for particular institutions or keeping track of assignments, and marks of college exams.

**Stakeholders:**

* Keep Satisfied(High Power , Low Interest)

Registrar Sir, Possible Investors, etc.

* Engage closely and influence actively(High Power, High Interest)

Dr. Uma

* Monitor(Low Power, Low Interest)

Users(students, professors)

* Keep Informed(Low Power, High Interest)

Users(students, professors)

**Business Profile:**

* Project Location: India
* Project total cost: approximately $2 million
* Project time span: Four months or Sixteen weeks
* Project Field: Ed-tech platform for colleges

**Project Scope:**

The scope of the website to be made includes the following key elements:

**UI / UX:**

The site will have a user-friendly interface and thus provide a good user experience while checking their particulars or referring to the educational content posted by the teachers and making it easy for the teachers as well to post the mentioned content.

**Authentication and Security**:

It will allow users to create and use their accounts or sign up with mainstream services like google, Facebook etc. The password for accounts created will be secured using hashing and salting and using passport js. It will also have cookies that will manage the session size of the teachers after logging in with their accounts.

**Features:**

* The site will enable teachers to create and share notes, pdfs, and other files in the database which will be accessible to students.
* Also, it will allow teachers/professors to take attendance, and send assignments and marks, each student received.
* Another feature that the website will have is to show the student records such as attendance in the form of a progress bar.

**Methodology and tools used for a feasibility study:**

* We visited various websites such as Google Classroom, Parakh, LMS sites, etc related to our problem statement which are working in this field, and found the areas where improvement is required for better user experience and ease of use.
* We also brainstormed all the possible features that can aid the target audience and cater to their needs. Then we made a rough sketch on how to go about building these features.
* We also researched the minimum, average and maximum costs on the resources needed to build such a site like its monthly and yearly maintenance costs as well as development cost(one-time cost) and that we are not breaking any laws pertaining to this domain.
* While analyzing the market, the main focus was to study the competition so as to create a distinguishing factor for our product.

**Observations and findings from the feasibility study:**

**Market Research:**

* Our target market comprises colleges, where students and teachers will utilize this product.
* Currently, the mainstream solutions available for the above-mentioned problems are scattered and need to be more specific.
* *Increasing Scope:*

1. Higher Education Under New National Education Policy 2020: Through this NEP they aim to increase their GER (Gross Enrollment Ratio) from 26.3% to 50% by 2035, and around 3.5 crore new seats will also be added to higher education institutions thus increasing our market.
2. At least one oversized multidisciplinary HEI (higher education institution) should be built-in or near every district by 2030 thus further increasing our market.

**Technical Feasibility:**

* The project will be made using the MERN (MongoDB, Express, React, Node) stack.
* Figma will be used for UI/UX creation.
* HTML, CSS, Bootstrap, and Javascript will be used for the frontend.  
  Node.js for server-side JavaScript execution and express.js and EJS for the backend.
* MongoDB and mongoose or My SQL as the database.

**Economic Feasibility:**

* Development Cost: $150,000.
* Yearly Maintenance Cost: $54,000 - $60,000 (Domain name, Web hosting, SSL certification, Email Services, Tech Support, Plugins, Marketing, and SEO).

**Scheduling Feasibility:**

* We will have a team of 3 developers and designers working on the project.
* The estimated time for the development of the project will be around 4 months.

**Operational Feasibility:**

* Successfully developing the project is achievable.
* The system would need to be designed with user-friendly features and be easily accessible to both teachers and students.
* Increasing potential target audience.

**Legal Feasibility:**

* Our product will be in line with the new education policy(NEP) 2020.
* The new system, which is still being implemented, includes an emphasis on online learning, more school hours, and a shift away from rote learning.
* The policy focuses on using technology in education to make it more accessible and effective.

**Challenges And Risks:**

There are several challenges that may arise during the development and launch of the project. It is important to be aware of these in order to mitigate them effectively. Some of the key challenges include:

*Competition:*

* There are already well-set-up products like google classroom and google keep that are working closely in this domain(with other features) and can switch to the features we aim to provide at any time.
* Academic bank of credit (ABC) will be created as a digital recognition awarded for a student’s academic performance. ABC can allow universities to verify an institution’s credits, or schools can use it to reward or recognize students. It can help to keep track of the credits each student has earned over time.
* PARAKH is a new national assessment platform. It will assess students’ learning and help them to analyze their strengths, weaknesses, gaps, and potential.

*Complexity:*

* To provide the features as intended, the complexity of handling a database will be high and a separate database will also be needed for user accounts.
* Multiple teachers will be assigned multiple classes and multiple records need to be managed for a single student and to create a separate progress bar for each category for each student that will make things complicated to implement and can go wrong at so many stages.

*Team Stats:*

To make the expected product the team will need to upskill and reach the level of a full stack developer as currently, not all members have knowledge of full stack development.

**Team Members:**

**Team name: TeraBytes**

**Team Details:**

1. Sarthak Jain ( 21bcs102 )
2. Vishal Kumar ( 21bcs134 )
3. Kshitiz Sachan (21bcs057) (*Team Leader*)

**References:**

* [What is Academic Bank of Credits (ABC) in Higher Education Institutions? (iitms.co.in)](https://www.iitms.co.in/blog/what-is-academic-bank-of-credit.html)
* [National Education Policy 2020 (ruralindiaonline.org)](https://ruralindiaonline.org/en/library/resource/national-education-policy-2020/?gclid=Cj0KCQiAt66eBhCnARIsAKf3ZNH9ynI3l4XMthvzmFjfuUrWS0OTof0NLbJeuvL-5tUZsdLMxJuWvd8aAmY6EALw_wcB)
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