BAHIR DAR UNIVERSITY

BAHIR DAR INSTITUTE OF TECHNOLOGY

FACULITY OF ELECTRICAL AND COMPUTER ENGINEERING

COMPUTER ENGINEERING DEPARTMENT

PROPOSAL ON

UNIFIED LEGAL SERVICE FOR ETHIOPIAN LAWYERS AND CLIENTS

PROPOSED BY

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BAHIRDAR, ETHIOPIA

Declaration

We are students of Bahir Dar University in Bahir Dar Institute of technology (BIT), faculty of Electrical and Computer Engineering. The information found in this proposal project is our original work. And all sources of materials that will be used for the project work will be fully acknowledged.

Name	**Signature**
1. _____	_____
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3. _____	_____
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Date of Submission:

This project proposal has been submitted for examination with our approval as a university advisor.

Project advisor	**Signature**	**Date**
_____	_____	_____

Acknowledgment

Abstract

Our project, "Unified Legal System for Ethiopian Lawyers and Clients," aims to modernize legal services in Ethiopia through an integrated mobile and web platform. The system addresses the challenges of accessibility, efficiency, and affordability in legal services by providing a suite of features including lawyer discovery, document automation, legal aid, dispute resolution, and case management tools.

The platform will empower clients to find qualified lawyers, book appointments, and resolve disputes online. For lawyers, it offers tools to manage cases, track client activities, and handle billing efficiently. The system also supports underserved communities through AI-powered legal aid and pro bono connections. With this project, we aim to enhance legal service delivery in Ethiopia, bridging the gap between legal professionals and clients while leveraging modern technology.

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Abbreviations

AI	Artificial Intelligence
API	Application Programming Interface
BERT	Bidirectional Encoder Representations from Transformers
FAQ	Frequently Asked Questions
GC	Gregorian Calendar
NER	Named Entity Recognition
NLP	Natural Language Processing
ODR	Online Dispute Resolution
UI/UX	User Interface/User Experience
WIFI	Wireless Fidelity

Introduction

The legal system plays a vital role in ensuring justice and upholding societal order. In Ethiopia, the legal sector faces several challenges, including limited accessibility to legal services, inefficiencies in case handling, and the absence of modern tools to bridge the gap between lawyers and clients. Many citizens, particularly those in underserved communities, struggle to access affordable legal assistance due to a lack of awareness, limited resources, and geographic constraints [1].

The adoption of technology in the legal field, often referred to as "legal tech," has proven transformative in various parts of the world. For instance, platforms such as LegalZoom and Clio have simplified legal document creation and case management, enhancing access to justice for many people[2][3]. Ethiopia, however, has yet to fully embrace this digital transformation. Most legal processes remain manual, leading to inefficiencies and delays that affect clients and lawyers alike [4].

Furthermore, the growing internet penetration and mobile usage in Ethiopia provide an opportunity to develop digital solutions for legal services. Recent studies indicate that Ethiopia's internet penetration has reached over 25%, with mobile subscriptions steadily increasing [5]. These advancements make it feasible to deploy an online platform that connects clients with legal professionals and automates key legal tasks.

This project seeks to address these gaps by proposing a unified legal system that modernizes legal services in Ethiopia. By combining features like lawyer discovery, document automation, and dispute resolution, the platform aims to streamline operations for lawyers while making legal services more accessible to clients, particularly those in underserved regions.

Literature Review

Susskind's seminal work explores the future of the legal profession in the face of technological disruption. He emphasizes how digital tools and platforms can democratize access to legal services, making them affordable and efficient. Susskind argues for a client-centered approach, where technology enables seamless interactions between lawyers and clients, enhancing transparency and efficiency [6]. This perspective is directly applicable to our project, which seeks to modernize Ethiopia's legal system by bridging the gap between legal professionals and clients through a unified platform.

Katsh and Rifkin's pioneering work introduces the concept of Online Dispute Resolution (ODR), an innovative approach to resolving disputes outside traditional courtrooms. The authors highlight the role of digital platforms in facilitating mediation and arbitration, particularly in environments where in-person legal processes are inaccessible or inefficient. This aligns with our project's focus on providing ODR tools to enhance access to justice in underserved Ethiopian communities [7].

Again, Susskind examines the evolving role of lawyers in a world increasingly dominated by technology. He introduces concepts like document automation, virtual legal services, and AI-powered legal aid, predicting a shift from traditional legal practice to innovative, technology-driven models. This literature underpins our project's vision of incorporating AI for legal aid and automating document creation to make legal services more efficient and affordable [8].

Mayson's work discusses the impact of technological advancements on the legal profession, with a particular focus on how artificial intelligence, automation, and online platforms are reshaping legal services. The book explores case studies of legal tech startups and their role in making legal services more accessible, affordable, and efficient. Mayson argues that the legal industry must adapt to these changes to remain relevant and serve a broader range of clients. This literature supports our project's use of AI-powered legal aid and document automation to improve legal service delivery in Ethiopia [9].

Problem Statement

In Ethiopia, access to legal services is limited due to factors such as geographical barriers, high costs, and a lack of awareness, particularly in underserved communities. The legal system remains largely manual, resulting in inefficiencies in case management, document preparation, and dispute resolution. Additional to this, there is no centralized digital platform that connects clients with qualified lawyers, automates legal document generation, or facilitates online dispute resolution. This creates a significant gap in the availability and affordability of legal services, making it difficult for many Ethiopians to access timely and effective legal assistance.

Objective

General Objective

The general objective of this project is to develop a unified mobile and web platform that modernizes and streamlines legal services in Ethiopia by connecting clients with qualified lawyers.

Specific Objective

- To create a lawyer discovery system that allows clients to search for and book appointments with qualified lawyers.
- To design a chat features that allow customers to chat with any lawyer.
- To develop an AI-powered legal aid system to provide basic legal guidance and connect users to pro bono lawyers.
- To implement an online dispute resolution (ODR) system for efficient mediation and arbitration.
- To provide case management tools for lawyers to track clients and deadlines.

Methodology

Requirement Gathering and Analysis

In this phase, we will identify the detailed requirements for the platform by:

- Conducting surveys and interviews with potential users (clients, lawyers, and legal professionals) to understand their needs.
- Reviewing existing legal systems and platforms in Ethiopia to identify gaps and areas for improvement.

System Design

The system design phase will focus on creating a blueprint for the platform:

- We will design the platform's architecture, detailing the mobile and web components, backend structure, databases, and APIs. We'll ensure that the system is scalable, secure, and easily maintainable.
- The user interface will be designed with accessibility and ease of use in mind. Wireframes and prototypes will be created using design tools Figma.
- We will design a relational database schema to store user data, legal documents, case information. MongoDb will be used as the database for initial development.

Development

The development phase will involve:

- We will develop the mobile and web interfaces using React for the web platform and React native for mobile applications.
- The backend will be built using Nodejs for web services and API development.

Testing

Testing will be performed in parallel with development to ensure the platform is reliable and functional:

- We will perform unit test, integration test, usability test, performance test
- We will perform penetration testing and vulnerability assessments to ensure the system is secure, especially when handling sensitive legal data.

Deployment

Once the system has been developed and tested, we will deploy it to production. We will use a free deployment servers like netlify or vercel.

AI Methodology

- We will collect legal documents, FAQs, and case studies relevant to Ethiopian law. Clean and organize the data for training the AI model.
- We will use NLP techniques like Named Entity Recognition (NER) and text classification to train the AI on legal queries and responses. Pre-trained models like GPT or BERT will be fine-tuned on the collected legal data.
- Integrate the AI model into the mobile and web platform as a chatbot, providing legal advice and connecting users to pro bono lawyers if necessary.
- Evaluate the AI's accuracy in answering legal questions and gather user feedback for continuous improvement. Ensure the system is free from biases.
- Deploy the AI-powered legal aid system on the platform and continuously monitor its performance, updating it with new legal data as needed.

Scope of the Project

- The platform will be developed for use across Ethiopia, targeting both urban and rural areas.
- The platform will support both Amharic and English to ensure accessibility for a wide range of users across Ethiopia.
- The platform will cater to clients (Individuals seeking legal advice) and registered lawyers.

Limitations of the Project

- The system will not integrate with existing national legal systems or databases in Ethiopia.
- This system will not provide formal legal representation or in-depth legal consultations.
- The system will not handle highly specialized legal fields or cases that require face-to-face meetings.

Significance of the Project

The significance of the research will be:-

- Provides legal assistance to underserved areas, eliminating geographical barriers.
- Reduces the cost of legal services through automation and online dispute resolution.
- AI-powered chatbot offers free legal advice to low-income individuals.
- Case management tools streamline workflows, saving time and resources.
- Educates the public on legal rights, increasing legal literacy.
- Modernizes the legal infrastructure and promotes digital adoption in the justice system.

Work Plan

Months	Dec				Jan				Feb				Mar				Apr				May				Jun			
Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Requirement gathering																												
Data collection for AI																												
System architecture and database design																												
UI/UX design																												
Frontend Development																												
Backend development																												
App development																												
AI-Powered legal aid system integration																												
Document Automation System Implementation																												
System testing and debugging																												
Deployment																												
Documentation																												

Table 1.1 Time Frame for the Project/Work Plan

Cost and Material Required

Since there is a full coverage of WIFI access in our institute we have any official budget to this project. But for transportation and printing purpose we allocate 1,000 ETB.

Reference

[1]. UNDP, "Legal Empowerment of the Poor: Challenges and Opportunities".

[2]. LegalZoom, "Simplifying Legal Documents", *LegalZoom*, https://www.legalzoom.com.

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[4]. World Bank, "Doing Business in Ethiopia: Legal Environment Overview".

[5]. Statista, "Internet Penetration in Ethiopia – 2024".

[6]. Susskind, R., "*Tomorrow's Lawyers: An Introduction to Your Future*", Oxford University Press, Oxford, 1st edn., 2013.

[7]. Katsh, E., and Rifkin, J., "*Online Dispute Resolution: Resolving Conflicts in Cyberspace*", Jossey-Bass, San Francisco, 1st edn., 2001.

[8]. Susskind, R., "*The End of Lawyers? Rethinking the Nature of Legal Services*", Oxford University Press, Oxford, 1st edn., 2010.

[9]. Mayson, S., "*The Future of Legal Services in the Age of Technology*", Routledge, London, 1st edn., 2019.