Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Engineering & Technology** **Department of Information and Communication Technology**	
Subject: CP		
Exp-1	**Date:23-09-25**	**Enrollment No:92200133007**

Capstone Project Proposal

Introduction

Our project proposal is all about creating a web app that handles the management and selling of 3-phase electrical items. Due to the high demand for industrial and commercial electrical solutions, there's a need for a digital platform that makes product management, customer communication, and inventory tracking easier.

Problem Statement

Businesses in the electrical industry that deal with 3-phase electrical items are facing challenges like not having a central place for product data, struggling to handle large inventories, and facing difficulties in interacting with customers. The current manual systems are error-prone, making scalability and business growth tough. Without a strong digital platform in place, providing seamless customer experiences becomes difficult.

Objectives

1. Build a centralized digital platform for managing 3-phase electrical items.
2. Set up secure user authentication and role-based access for both customers and admins.
3. Include features for product search, filtering, and categorization to make browsing more efficient.
4. Ensure scalability and reliability by using modern web frameworks.
5. Design a user-friendly interface that works well on desktops and mobile devices.

Relevance to ICT Domain

Our solution fits well within the ICT domain, specifically in web development and cloud integration. We're using modern frameworks like React, Node.js, and MySQL to create the system. We're also integrating current ICT trends such as e-commerce digitalization, scalable cloud hosting, and secure web technologies like JWT authentication and HTTPS.

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Feasibility Analysis

- Technical Feasibility: Tools include React (frontend), Node.js + Express (backend), MySQL (database)
- Economic Feasibility: We're mainly using free or community editions of frameworks and databases. Cloud hosting costs can be minimized by using free-tier services during development and affordable shared hosting for deployment.
- Ethical Considerations: We'll ensure data privacy and secure handling of customer information through encryption, secure login, and compliance with privacy regulations.

Market/User Needs Analysis

Our target users are small-to-medium businesses, contractors, and industries that rely on 3-phase electrical equipment. Research shows that digital adoption in the electrical distribution market is on the rise, with demand for real-time availability, transparent pricing, and efficient logistics. Digital platforms have been proven to increase sales efficiency by up to 35% and reduce inventory issues by 40%.

Literature Review

Existing platforms for electrical products are generic e-commerce solutions that don't cater specifically to 3-phase electrical systems. Literature in IEEE and ACM emphasizes the need for domain-specific digital platforms that incorporate product specifications, compatibility checks, and industrial standards. Our solution improves upon existing models by including sector-specific functionalities like voltage/current ratings, load capacity filters, and compliance tracking.