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## AUTOMATED DATA REPORTING AND CONSOLIDATION SYSTEM

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Enhancing Accuracy, Efficiency, and Real-Time Decision-Making for KTDA Factories.

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KTDA

Majani Plaza, Koinange Street P.O. Box 30213 – 00100. Nairobi, Kenya

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## **Chapter 1: Executive Summary**

This proposal outlines the development and implementation of an Automated Data Reporting and Consolidation System for KTDA Factories. The system will streamline the process of submitting, replicating, and analyzing data at the Head Office (HQ). By automation of daily and monthly data submissions, this project will enhance data accuracy, reduce manual work and accelerate management decision-making.

## **Chapter 2: Background & Problem Definition**

### **2.1 Background and Current Situation**

Currently, KTDA subsidiary companies manually submit daily and monthly production and logistics data to their respective regions and replicate to the HQ. The data includes key performance indicators such as factory weight, receipt weight, out turns, made teas, weather, fuel stocks, packed teas, arrival times, diversions, tea dispatches, FDS details, packing materials, fertilizer, fleet, sisal bags and labour distribution. This manual process leads to inconsistencies, delays, and difficulties in data analysis and decision making by management, thus the Head Office staff spends significant time cleaning and preparing data for reporting and audit purposes.

### **2.2 Problem Statement**

The current data reporting process is time-consuming, prone to human error, and lacks automation. The absence of a unified reporting system causes data duplication and inefficiency in monthly analysis. There is a clear need for a centralized automated system that ensures real-time replication and visibility of factory submissions (**reports are generated at a click**).

## **Chapter 3: Project Objectives**

### **3.1 Main Objective**

- i. Develop an automated Data Reporting for KTDA Factories.

### **3.2 Specific objectives**

- ii. Enable real-time data validation and reduce reporting errors.
- iii. Provide a centralized dashboard for HQ analysts to view and analyze reports.
- iv. Generate monthly summary reports automatically and notify relevant staff.

## Chapter 4: Proposed Solution

### 4.1 Overview

The proposed Automated Data Reporting System will be a web-based platform that allows each factory to submit daily operational data online. These data will be stored in a central database at the HQ, automatically consolidating submissions and generating monthly reports including charts and summaries for quick analysis.

### 4.2 Core System Modules

Core system modules include:

- i. **Factory Data Submission Interface** – Digital forms for capturing daily factory data at the factory level.
- ii. **Data Replication & Synchronization Module** – Automates real-time replication of daily data to HQ and monthly consolidation.
- iii. **Analytics & Reporting Module** – Generates automated weekly and monthly reports with trends, KPIs, and visual charts.
- iv. **Centralized HQ Dashboard** – Provides management and analysts with a unified view of branch data for decision-making.
- v. **Notifications and Alerts System** – Sends automated alerts for missing, late or inconsistent data submissions.
- vi. **User Management & Security Module** – Ensures role-based access, secure logins, and audit trails for accountability.

#### 4.3 System Flow

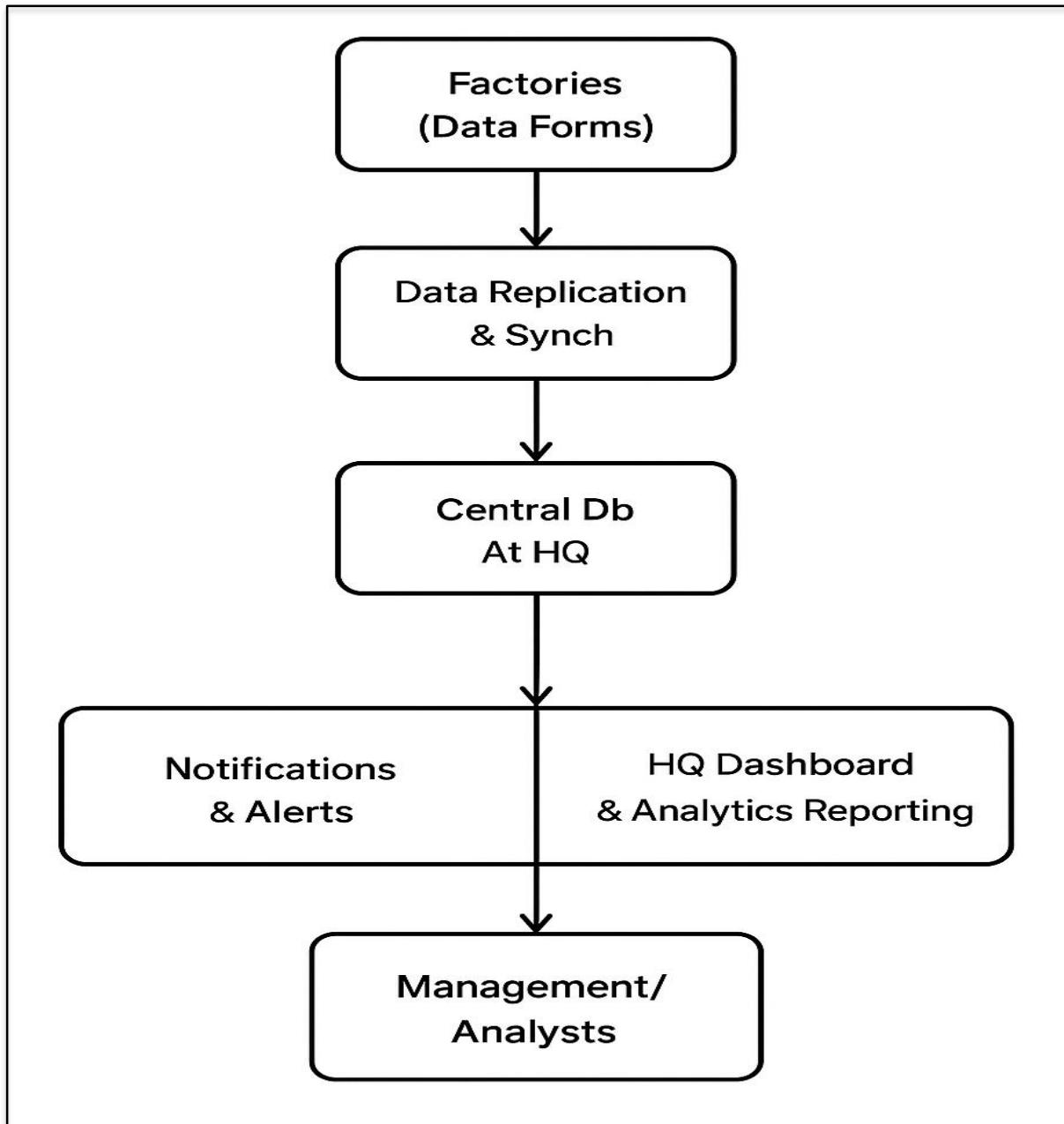


Figure 1: System Flow

## **Chapter 5: Expected Outcomes and Benefits**

The implementation of this system will result in:

- i. Improved data accuracy and reliability.
- ii. Reduced manual work and time spent compiling reports.
- iii. Enhanced visibility and traceability of factories' performance.
- iv. Real-time access to daily and monthly reports.

## **Chapter 6: Project Scope**

### **6.1 Scope Definition**

The scope of this project focuses on enhancing the existing KTDA online reporting system by introducing automation, real-time data flow, and integrated analytics. It excludes hardware acquisition and third-party integrations at this phase.

### **6.2 Scope Clarification**

This project enhances the existing KTDA online reporting system by extending it with automation, real-time synchronization, and advanced analytics to ensure faster reporting, less manual work, and improved decision-making, while leveraging the company's existing ICT infrastructure.

## **Chapter 7: Implementation Plan & Timeline**

<b>Phase</b>	<b>Activity</b>	<b>Duration</b>
1	Requirement Gathering & System Design	2 weeks
2	Development & Testing	4 weeks
3	Branch Training & Rollout	2 weeks
4	Pilot Phase (Monitoring & Adjustments)	2 weeks
5	Final Deployment & Evaluation	1 week

## **Chapter 8: Required Resources**

For successful implementation of the Automated Data Reporting and Consolidation System will require the following resources:

<b>i. Technical</b>	<b>ii. Human</b>	<b>iii. Software</b>	<b>iv. Time for:</b>
Central server space	ICT staff	Web-based reporting platform	Requirement gathering
Reliable internet connectivity	Factory data clerks/operators	Analytics and visualization tools	Staff training and sensitization sessions
Standard computers or tablets	HQ analysts	Security tools	

## **Chapter 9: Risk Assessment and Mitigation**

Every ICT project carries potential risks that may affect implementation and sustainability, which this project acknowledges as possible challenges and provides strategies to minimize their impact.

They include:

- i. Data inconsistency due to poor internet at factories → Implement offline data caching.
- ii. User adoption resistance → Conduct user sensitization and training sessions.
- iii. Data security concerns → Use encryption and access control mechanisms.
- iv. System Downtime and/or Technical Issues → Deploy a backup system and monitoring tools with ICT support teams on standby for troubleshooting

## **Chapter 10: Monitoring and Evaluation**

The system's performance will be measured based on data submission compliance rates, report accuracy, system uptime, and user satisfaction. Monthly review meetings will ensure continuous improvement.

## **Chapter 11: Conclusion**

The Automated Data Reporting and Consolidation System aligns with KTDA's ICT modernization goals. It will greatly reduce manual workloads, improve accuracy, and ensure faster decision-making through real-time insights. This project will be a major step toward a data-driven culture across KTDA and its subsidiary companies.