

# Kaizen Case Study

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## Introduction

A large Indian multinational company incorporated a new company in the umbrella brand for sustainable infrastructure development project. With long years of experience and a wide customer base, the company started to get huge infrastructure projects soon after its inception. Because of the criticality of projects and the volume of work required, the new entity required a system that would help project teams pool resources and make the best use of experience of work through a collaborated knowledge management platform. Enlighten IT developed a Knowledge Management System for this new corporate division of a multinational conglomerate from India.

The project involved a team of 8 people who were occupied in various activities and a stage for development of a web-based software that was to manage over 400 existing users and was to be made scalable for managing over 4000 users that were expected to be added in near future. The project was developed using a Rapid Application Development methodology.

## Company Background

An Indian multinational conglomerate that had its presence in multiple industries including automotive, aerospace, construction, defence, energy, insurance, information technology, real estate, logistics and retail had its operations spread across 100 countries. A new division was incorporated for management of large sustainable infrastructure projects. Beginning with 40 people, the new entity soon grew to the team of 400 and a rapid growth was planned.

## Need Assessment

The company had come up with a new project on sustainable infrastructure development with a project life cycle of 4-5 years. With the new system implementations, the organization was looking for a system that could ensure their success in the long in for the large number of implementations. The management came up with an idea of developing a customized knowledge management system that would help project teams to record learning, make

## Objectives

Key objectives of the development of the KMS system were:

- Enable project teams to record and share their learning in a unified and seamless system
- Create a UX design that makes the system interesting and simple to use
- Make the learning curve for project users fast
- Develop a system which is scalable to take unlimited users for future expansion

## Project Resource Management

The project team consisted of 8 key members. The roles of each member are defined as below:

**Project Manager:** Project manager initiated the software development project, assigned responsibilities to project team members, monitored and controlled the deliverables.

**Project Coordinator:** Project coordinator was involved in coordinating between project team members and the managers of the client organization on its work flows, activities and information

**Requirement Analyst:** Requirement analyst had an exhaustive meeting with the client to understand the requirement which included discussions on the user profile needs, interface needs, functional requirements, design requirements, and timelines.

**Quality Officer:** A quality office was deployed for taking care of the quality aspects including the development standards, design perfection, software testing and project deliveries.

**Senior Developers:** 2 senior software developers were involved on the project that were to develop the high-level software code snippets as well as guide the team of junior developers for smooth development.

**Junior Developers:** Two junior programmers were responsible for carrying out most of the development work including development of the interfaces and functionalities.

## Solution

The developed solution had following components:

**User Profiles & Interfaces:** The knowledge management system involves three levels of user profiles. Every user was provided with the similar interface but different job roles, access points and functionalities. Users included Process owner, Collaborator and general user.

**Development Applications:** The software was developed using DotNet, SQL, Ajax and Java at the backend.

**Development methodology:** A Rapid Application Development Framework was used for the software development. Every module was developed, quality assured, tested and approved separately. Only after one module was developed and refined, the team proceeded with the next module.

**Functional requirements:** There were two sets of functional requirements and that included management of K-points and learning sheets, and recognition system for project teams.

### Management of K-points and Learning Sheets

The system was to record the pain areas of various projects. These pain areas were the challenges or difficulties that the project team faced at any point of time on the project or in the company. K-points were created by process owner for every pain area. Within one pain area, general users were allowed to create multiple learning sheets. Learning sheets were created to record the specific difficulty faced along with the solution implemented. This learning sheet solved two key purposes:

- It would serve as a future reference for solving similar problems occurring in the organization or the project.
- It would address an existing issue faced by the company which can be solved with the implementation of the suggestion provided in the learning sheet

Every learning sheet created by the general user has to go through 6 phases including Draft, Submit, Revision, Acceptance, Incorporation, and Implementation.

**Draft:** In this stage, a general user can create a learning sheet and keep it saved in the system

**Submit:** Once the learning sheet is created and finalized with all necessary details included, the general user would submit the sheet to the process owner

**Review:** Process owner would conduct scrutiny on the learning sheet submitted so that a decision can be taken on whether to approve the suggestions for incorporation or not.

**Acceptance:** If the process owner feels that the learning sheet suggested a viable solution, then he or she would accept and approve the learning sheet. The sheet may also be rejected and in that case, the sheet would remain stored in the system but would not go to the next stage.

**Incorporation:** The suggestions of the learning sheet are incorporated in the management plan and policy structure. The responsibility of incorporate was with the process owner. The system was to set highlights and reminders for incorporation if that was not completed by the process owner.

**Implementation:** This is the last stage of learning sheet management process in which the actual implementation of the solution suggested in the sheet is carried out. The responsibility of incorporate was with general users and implementation teams respective the concerned problem area. The system was to set highlights and reminders for implementation if that was not completed and the learning sheet would be marked as implemented only after an actual implementation is finished and recorded in the system.

## Recognition System

The system was to encourage employees to participate in learning sheet creation for which they were given recognition. An award system was set that appreciated the employees who used the KMS for creating learning sheets. There were three types of awards including bands, coins and badges and two categories of blue and orange set for creation and resolution.

The system would calculate the points scored in each category by every user and would maintain the records. These records would automatically go through a ranking process and top performer profiles would be highlighted in a leader board. This leader board acted as a recognition system such that every employee who actively participated in the enterprise learning was appreciated.

## Project Development

The software project was developed using a Rapid Application Development framework which is an iterative approach to software development. The project was divided into four key stages including requirement analysis, proof of concept, pilot testing, and RAD based software development.

**Requirement Analysis:** This phase involved determination of user expectations for which three key user profiles were identified. These profiles included process owners, learning sheet creators, and collaborators. Selected users from each profile category were then interviewed to gather requirements.

**Proof of Concept:** The development idea and structure was presented to the client organization for demonstration of the capabilities of the system such that when the concept was approved, the development was started for the respective module.

**Module Development:** Upon approval of the POC, the respective module was developed incorporating all the functional and technical requirements.

**Pilot Testing:** Before the developed module was deployed, a set of limited users from Enli10IT were given the responsibility of testing the software module. Once the internal tester's feedbacks were received and incorporated, the module would go to the client team for validation of requirements once that was done; the product would be prepared for the beta stage. Pilot testing ensured that the final development was freed from all the bugs.

**RAD based Software Development Iterations:** These iterations were based on individual modules that were developed for the KMS system. All iterations involved four stages that included development, quality assurance, security testing, and user acceptance testing. Module-wise prototypes were developed and were delivered to client such that the project moved to the next stage only after the user acceptance testing for developed modules.

The RAD and module-based iteration approach was chosen for a few reasons -

- RAD allowed the organization to complete the development fast
- Module based iterations ensured that all individual modules of the software that were developed were perfectly functional
- The iterative approach provided the company enough flexibility to the company to incorporate modifications based on client suggestions whenever required

## Development Outcomes

The development resulted into creation of a learning management system that was used by 400 people working in the client organization for creating learning sheets and incorporating required changes in the organization for continuous improvement of processes.

Specific Benefits that company received from the development of KMS included:

- Many technical challenges could be solved by referring to the old learning sheets
- New changes that were useful for improving technical, business and management processes could be implemented
- Employee morale was boosted as they started to get a companywide visibility and recognition
- An effective collaboration between team members was achieved such that problems could be solved faster
- Every lesson learnt by any employee of the company could be recorded and shared with other employees to enhance the overall learning curve of the project teams