

Title: Managing CMMS Implementation Risks: Lessons from Multi-Site Industrial Implementations

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Company represented: Neximatech / Independent Consultant

Role: Consultant / Service Provider

Sector: Petrochemical / Industrial / Multi-sector

Asset owner: Confidential – multiple industrial asset owners

Introduction

This case study is based on practical experience gained from CMMS implementations across more than 60 heavy industrial facilities. It focuses on risks that led to delays, failure to achieve expected results, low user acceptance, or reduced long-term use of the system. It also highlights practical actions that helped improve results in these types of projects.

CMMS should be viewed not simply as a software project, but as a business change program that supports broader asset management objectives.

Description of assets in study

These projects were carried out across heavy industrial sites in the oil, gas, and petrochemical sectors. The assets covered included rotating equipment, fixed equipment, utility systems, production lines, maintenance workshops, and related infrastructure. Most of these facilities operated under continuous operating conditions.

When was the activity carried out?

This experience was gained over 15 years across multiple CMMS projects involving data collection, implementation, system development, and improvement work. Project durations varied from several months to multiple years, depending on the number of assets, number of users, operational complexity, and the level of organizational preparation.

Why was the activity carried out?

The purpose of implementing CMMS projects was to establish a structured maintenance management system, improve operational control, standardize equipment information, reduce recurring failures, increase workforce efficiency, support continuous improvement, and provide reliable information for better decision-making.

Terminology

CMMS: A system used to manage maintenance planning, records, and work activities.

Asset Hierarchy: A structured classification of assets and equipment for control and reporting.

Implementation: The process of introducing, configuring, and putting the system into use.

Change Management: Actions taken to help people and the organization adapt to a new system.

Description of activity

Methodology

To analyze CMMS implementation risks, experience from multiple projects was reviewed and recurring risk patterns were identified across them. These risks were grouped into five main categories: management, data, process, technical, and people-related risks. Each risk was then assessed based on likelihood and its impact on schedule, cost, implementation quality, and continued use of the system.

References

This approach was developed mainly from practical experience gained through real implementation projects. It also incorporates principles from ISO 14224 and ISO 55000 related to asset hierarchy and asset management. Established project risk management principles were applied in the risk assessment process.

Risk types

The risks identified in this study included the following:

- Insufficient executive support
- Excessive project scope
- Poor asset hierarchy and equipment coding
- Poor quality of existing data
- Overly complex system design
- Poor integration with other systems
- Resource constraints
- User resistance to change
- Insufficient user training
- Lack of ownership, support, and follow-up after system launch

Risk management process

Project risks were reviewed across different stages, including project initiation, system design, data collection, training, system launch, and the post-implementation period. To manage these risks, a management committee was established, and corrective or preventive actions were defined for each case. Risk status was also monitored continuously throughout the project.

Tools used

The tools used in these projects included the CMMS platform, Excel files for data collection and control, weekly and monthly management reports, project scheduling Gantt charts, and monitoring dashboards.

Costing

Project costs included software purchase and customization for local needs, contractors for data collection and data entry, trainers for user training, consultants to assess and establish appropriate maintenance strategies, internal staff time, technical support, and costs related to required modifications.

People

The people involved in these projects included senior management, operations managers, engineering teams, maintenance managers, planners, supervisors, technical specialists, end users, the IT department, finance teams, contractors, and consultants.

What was the main output of the activity?

The main results of these activities included the creation of a structured equipment database covering asset hierarchy, technical specifications, and PM routines; improved planning and scheduling of maintenance activities; better tracking of historical records; better quality and clarity in reporting; and access to reliable information for management decision-making.

Validation

Project results were evaluated through continued use of the system by users, the quality of recorded data, more consistent planning of activities, satisfaction of operations and maintenance departments, and reductions in failures and unplanned downtime. Better results were observed in projects where a more supportive organizational culture and active management support were present.

Outcome

Experience showed that the main factor in CMMS project success was not the selection of the software itself, but the effective management of the implementation process, clear definition of responsibilities, consistent management support, and active user involvement throughout the project. In projects where these factors were considered from the beginning, use of the system, data quality, and the stability of results were considerably better.

It was also observed that long-term success depends on how well the system aligns with the organization's actual working processes and how well it is accepted by users.

If such projects were to be repeated, greater focus would go to data preparation and quality, targeted user training, early-stage change management, and continuous monitoring of system performance after system start-up.