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# Chapter 4 Computerized Maintenance Management System

## 4.1 Introduction

A computerized maintenance management system (CMMS) is a type of management software that performs functions in support of management and tracking of O&M activities.

## 4.2 CMMS Capabilities

CMMS systems automate most of the logistical functions performed by maintenance staff and management. CMMS systems come with many options and have many advantages over manual maintenance tracking systems. Depending on the complexity of the system chosen, typical CMMS functions may include the following:

- Work order generation, prioritization, and tracking by equipment/component.
- Historical tracking of all work orders generated which become sortable by equipment, date, person responding, etc.
- Tracking of scheduled and unscheduled maintenance activities.
- Storing of maintenance procedures as well as all warranty information by component.
- Storing of all technical documentation or procedures by component.
- Real-time reports of ongoing work activity.
- Calendar- or run-time-based preventive maintenance work order generation.
- Capital and labor cost tracking by component as well as shortest, median, and longest times to close a work order by component.
- Complete parts and materials inventory control with automated reorder capability.
- PDA interface to streamline input and work order generation.
- Outside service call/dispatch capabilities.

Many CMMS programs can now interface with existing energy management and control systems (EMCS) as well as property management systems. Coupling these capabilities allows for condition-based monitoring and component energy use profiles.

While CMMS can go a long way toward automating and improving the efficiency of most O&M programs, there are some common pitfalls. These include the following:

- **Improper selection of a CMMS vendor.** This is a site-specific decision. Time should be taken to evaluate initial needs and look for the proper match of system and service provider.
- **Inadequate training of the O&M administrative staff on proper use of the CMMS.** These staff need dedicated training on input, function, and maintenance of the CMMS. Typically, this training takes place at the customer's site after the system has been installed.

- **Lack of commitment to properly implement the CMMS.** A commitment needs to be in place for the start up/implementation of the CMMS. Most vendors provide this as a service and it is usually worth the expense.
- **Lack of commitment to persist in CMMS use and integration.** While CMMS provides significant advantages, they need to be maintained. Most successful CMMS installations have a “champion” of its use who ushers and encourages its continued use.

### 4.3 CMMS Benefits

One of the greatest benefits of the CMMS is the elimination of paperwork and manual tracking activities, thus enabling the building staff to become more productive. It should be noted that the functionality of a CMMS lies in its ability to collect and store information in an easily retrievable format. A CMMS does not make decisions, rather it provides the O&M manager with the best information to affect the *operational efficiency* of a facility.

Benefits to implement a CMMS include the following:

- Detection of impending problems before a failure occurs resulting in fewer failures and customer complaints.
- Achieving a higher level of planned maintenance activities that enables a more efficient use of staff resources.
- Affecting inventory control enabling better spare parts forecasting to eliminate shortages and minimize existing inventory.
- Maintaining optimal equipment performance that reduces downtime and results in longer equipment life.

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As reported in A.T. Kearney's and *Industry Week's* survey of 558 companies that are currently using a computerized maintenance management system (DPSI 1994), companies reported an average of:

- 28.3% increase in maintenance productivity
  - 20.1% reduction in equipment downtime
  - 19.4% savings in lower material costs
  - 17.8% reduction in MRO inventory
  - 14.5 months average payback time.
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### 4.4 Reference

DPSI. 1994. *Uptime for Windows Product Guide, Version 2.1*. DPSI, Greensboro, North Carolina.