

# CMMS

Computerized Maintenance Management Systems



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### Who needs CMMS?

- Maintenance Departments of Large Organizations
- Help Desks / Call Centers
- IT Departments

### What TCG can do:

- Implement and Support CMMS (Computerized Maintenance Management Systems such as Maximo by PSDI, Facility Center by Peregrine, MP2 by DataStream)
- "One-stop-shop" for all of a customer's CMMS needs which include:
  - Process analysis
  - Business practice reinvention
  - Hardware and operating system specifications (Rack mounted Servers, etc...)
  - Networking (NT or Novell, even Unix or Linux)
  - CMMS System installation and configuration
  - Data migrations (move existing data into the new system)
  - Interfaces to legacy systems (we make old systems talk with the new)
  - Report writing (in SQR or Crystal Reports)
  - Customized training for the system
  - Web enabled interfaces to the data
- TCG works with several types of databases including Oracle, SQL Server, SQLBase, Sybase, Access, FoxPro, and Dbase.

- TCG can work with data in any format.

### What is CMMS?

*Computerized Maintenance Management Systems provide a way for companies to track equipment and inventory assets, detail when and how work orders are to be performed in maintaining those assets, and accumulate all of the associated costs for labor, materials and tools.*

Here are some details:

- CMMS allow companies to electronically track orders for work (work orders) within a centralized software package.
- Work orders are created by a call center operator who takes calls from employees or customers out in the field (example: "My room is too hot!").
- A work order has a number assigned to it for tracking. Also, a work order administrator can assign specific maintenance workers (slang: wrench turners) to the tasks under the work order. Also, materials (inventory items) and tools that may be needed for the job are also assigned.
- A work order goes through several stages called status. It must first be "approved" by a maintenance administrator before becoming an active work order ("in progress"). Once the workers complete the work, it will be "completed" and later "closed".
- Workers can enter how much time they spend performing the work against a work order (called "labor reporting"). This allows the systems to rollup costs for the labor against a work order.
- A work order typically has several tasks under it (for example, change oil, rotate tires, check fluids, etc...). This collection of tasks or operations can be referred to as a "Job Plan". When a work order is created, it can be associated with a pre-existing job plan. This makes it much easier to define what is to be done on a work order.
- Work orders can also be automatically created by the CMMS through PMs

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(preventive maintenance). PM's are essentially a listing of work orders that have to be performed at a certain time interval or based on some meter reading. An example would include changing the oil in your car every 3 months OR every 3000 miles. The PMs in a CMMS typically generate tens or hundreds of work orders every week.

- Usually CMMS packages allow the users to track and enter all of the equipment (sometimes called assets) at the facility. This makes it easier to select what needs to be worked on when a work order is created. The call center operators can select the equipment directly from the list. The same is also true for "locations". Often, the whole facility is modeled in some manner in the software. Thus, the operator may select a building, a floor, a room, and within that room, a piece of equipment that is having problems and needs to be fixed. If the call was "The room is too hot" then the operator may simply select the room.
- CMMS packages can also assist the users in tracking materials in storerooms. This is often referred to as "Inventory". Just as a store sells items on a shelf, an inventory may be kept on-site to have parts ready for the maintenance personnel to use when they fix equipment. It can be a complex task keeping track of items in an inventory and thus the software assists greatly in this manner. Also, this allows the work order administrators to choose from a list of materials in the system which items will be needed to do the work.
- Inventories are typically made up of storerooms at one or more locations, items in the storeroom (which have unique numbers), and the bins that the materials reside in (like a hopper full of bolts).
- A list of Companies is also maintained in the software. This allows users to choose manufacturers for equipment or materials, and also aids in the purchasing of more materials.
- The purchasing of materials goes through several stages. Usually, when a part runs low (typically because the work orders are reserving and using the parts), more have to be ordered to refill the bins. This often starts

with a PR (Purchase Request) that has to be approved by a designated person. Once approved, the PR becomes a PO (Purchase Order). The PO consists of a list of materials that need to be purchased, and in what quantities. When several vendors are involved, the process becomes even more complicated. Most CMMS packages help manage the whole process of purchasing and tracking all of the costs associated with it.

- Finally most systems have to keep track of the laborers and users of the system, thus information can be stored about people such as salaries and what groups they belong to (such as electricians, plumbers, etc...).
- The task of configuring a CMMS can take months to accomplish. In fact, many systems don't become operational for as long as a year and don't operate smoothly or mature for several years. The installation of a CMMS can go as quickly as a week, but no useful information will be in the system. This is what makes implementation of CMMS packages very complicated. Most systems also utilize Client-Server Database technologies (Oracle, SQL Server, SQLBase) to distribute information to everyone's workstation. These systems are also not trivial to configure especially in existing IT infrastructures where many rules and limitations may apply.

### **How Can CMMS Save Money?**

*Most large corporations cannot remain competitive without an automated maintenance system.*

- Eliminates the nightmare of paperwork. Companies still tend to print out work orders for the maintenance personnel for convenience, but the software can organize these records and make lost work orders a thing of the past.
- Helps maintenance departments move from doing corrective maintenance to preventive maintenance which not only keeps the organization running more smoothly, but impacts safety and quality of life. Generally, it is much less expensive to maintain

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something than it is to fix it after it breaks. It also extends the life of the equipment.

- Makes work force more efficient. It helps workers plan their efforts. They spend less time tracking their work and more time fixing equipment. If each worker saves an hour every day (which is typical), the savings for a large maintenance department can be in the hundreds of thousands of dollars.
- Produces a variety of automated reports that can be analyzed to increase efficiency in these areas:
  1. Reduce obsolete inventory materials (it costs money to store materials/parts that are no longer needed for maintenance)
  2. Reduce the amount of material that has to be stored to do maintenance (it's easier to reorder more often when its automated, thus lowering balances)
  3. Track costs for materials from different vendors
  4. Monitor efficiency of personnel
  5. Look for ways to improve processes through standardization and repetition
  6. Automatically produce compliance reports (for example, to meet certain government standards for safety)