MANAGING MAINTENANCE WITH A CMMS – COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM

THIS TOPIC IS VERY BROAD, WE COULD WRITE AN ENTIRE BOOK ON IT… HOWEVER, WE WILL BE OBJECTIVE AND FOCUS ONLY IN THE PROCESS OF CHOOSING A CMMS AND WE'LL GIVE YOU A SET OF RECOMMENDATIONS AND STEPS THAT MUST BE TAKEN IN A CMMS IMPLEMENTATION.

CMMS cannot be seen as a trend or like some miracle that will come and solve all our maintenance problems. CMMS exist to support the manager in the Organization and Maintenance Management of his assets.

First of all, we should clarify the question: "Why a CMMS?"

- … is it because there is a legal obligation that forces you to computerize maintenance?
- … is it because your neighbor has a CMMS and you want one too?
- … is it because you want to replace current use of resources like Excel and / or Word and just centralize all information in one database?

The important thing is to be aware of the need to implement a CMMS and obviously be in agreement with the Company's Top Management.

Choosing a CMMS
The process of choosing a CMMS is something quite time consuming.
Usually, companies check with at least three companies/vendors, either maintenance management consulting companies or software houses. The support given in the implementation stage should absolutely be carried out by a company that has know-how in maintenance management.

What should a CMMS assure
In general, the main goals of a CMMS implementation in any company are to centralize and systematize all maintenance information, standardize processes, optimize maintenance management and introduce best practices in the department.

In what software features are concerned, the CMMS must enable the Asset Manager to:

•   Code, record and continuously update the inventory of his assets, with technical data sheets, preventive maintenance plans, recording readings, relate the assets with the spare parts/materials used;
•   Code, record and continuously update the inventory of materials used in maintenance, relate materials with the assets where they are used and keep track of their suppliers;
•   To plan and manage all maintenance work regardless of their nature (Planned or not Planned);
•   Report all activity (all work), indicating times, man-our effort, materials used and/or third-party services hired
•   Compute maintenance management indicators (KPIs) that allow the Manager to feel the 'pulse' of his maintenance: number of failures, downtime, preventive / corrective ratio (%), breakdown rate, cost and financial history, among many others.

Of course, regarding the software interface, the easier for the end user, the better. An interface with simple and direct operations is the best way to go, not because the end user is less skilled or less agile to carry out this task, not at all, but because the end users (in most cases, the maintenance technicians) must dedicate almost all their time to carry out tasks where they actually use their technical skills and talent and use what is left of their time to record information in the software – and not the other way around …

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Some recommendations that should be taken into account when choosing a CMMS:

•   Rule out developing a software 'in-house'. This is a time consuming process that can easily develop into something 'painful', demotivating and, in most cases, it is an endless task.
•   Rule out adjusting softwares, programs or other features that are not specific to maintenance (spreadsheets, your calendar with reminders, softwares for project management, etc…) – in the short run, they will be insufficient. Besides, they can be powerful tools but usually there is one person – one only – in charge of 'developing' and recording information in this tool, and only this one person knows how it works.

Here are the main goals and expectations you should have when you decide to implement and use a CMMS. In other words, here are the opportunities that such management system can bring:

•   Encourage, among the maintenance team (and even your Company), the use of up-to-date concepts, both maintenance concepts and management concepts
•   Obtain knowledge/information on your maintenance, systematize it and make it available for anyone, anywhere – and no longer needing to rely on people's heads;
•   Introduce improvements in the Organization, starting immediately with the Implementation process
•   Automatically produce reports and KPIs for Management
•   Increase productivity

Like everything in life, there may be resistance imposed by the people around the Asset Managers… reactions like "That will never work here!" or "We don't have time to record things in the software!" or "Nobody will stick to this!", etc. Well, famous Portuguese poet Fernando Pessoa once said: "Stones on the way? I will keep them all and one day I will build a castle". Author Jim Collins, in his massive bestseller book "Good to Great", describes to us his extensive research on specific characteristics that made some companies transition from being average to become great companies in their business sectors, one of which applies very well to this resistance we are talking about: to confront the brutal truth of the situation, yet at the same time, never give up hope. Implementing a high-level maintenance management usually takes 3 to 5 years, you must not be discouraged.

Steps for an effective CMMS Implementation
Now that we have considered all of the above, it is time to get to work. Now that the CMMS has been chosen, we will encounter other questions … Where to start? Which way to go? What can be delegated? Who will do what?

When implementing a CMMS, these and many other questions will rise, but we believe the answer is simple and straightforward:

Follow, with discipline, the steps we describe below, one by one. They are the solid result of almost 30 years of experience in CMMS implementations in more than 30 different business sectors all around the World.

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Step 1 – Outline the project and assign key people

Set the «scope» and the goals of the project and identify the people that will be involved: project coordinator, technician(s) involved, who is your consultant, your IT guy …

Step 2 – Prepare the background information

Obtain the background information required for the CMMS configuration and use, whenever possible, the same coding system already in place for Cost Centers, Employee's names and codes, Suppliers, company's organization chart, technical intervention areas, etc..
At this stage, you should also decide on the coding system for your Assets.

Step 3 – Set the sequence in which you will collect the technical data (Data Collecting)

Set a convenient sequence for collecting the technical data on your assets. For example:
a)   Main Production equipment
b)   Electricity, Water, Gas and/or Fuel Meters
c)   HVAC equipment
d)   Safety equipment
e)   Etc.

Step 4 – Set a Chronogram for the implementation project

Specify scheduled dates for the Start and End of specific stages of the implementation.

	Week1	W2	W3	W4	W5	W6	W7	W8	W9	W10	...	Year 2	Y3	Y4	Y5	...
01. Project Outline	■															
02 . Prepare background Information	■															
03. Set the Data Collecting sequence	■															
04. Set an Implementation Chronogram	■															
05. Start Data Collecting	■															
06. Define the functional systematization		■	░	░	░	░	░	░	░	░	░	░	░	░	░	░
07. Record maintenance assets in the CMMS			■	■	░	░	░	░	░	░	░	░	░	░	░	░
08. Record the Materials in the CMMS					■	░	░	░	░	░	░	░	░	░	░	░
09. Preventive maintenance Plans						■	░	░	░	░	░	░	░	░	░	░
10. Start recording meter readings and running							■	░	░	░	░	░	░	░	░	░
11. Implement Preventive Work Orders								■	░	░	░	░	░	░	░	░
12. Implement Corrective Work Orders								■	░	░	░	░	░	░	░	░
13. Implement Maintenance Requests										■	░	░	░	░	░	░
14. Define your KPIs (Balanced Scorecard)	■	░	░	░	░	░	░	░	░	░	░	░	░	░	░	░

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Step 5 – Start Asset data collecting

Gather all available information (paper, spreadsheets, files and folders, etc. ...) on your equipment and have it available. Stick to your decision in Step 3.
Gather your most up-to-date asset list, technical datasheets, information on maintenance plans, plants and schematics of your facility(ies), etc…

Step 6 – Define Functional Systematization of your facility(ies)

-        Agree on abbreviations identifying the facilities (facility, building)
-        Create functional Groups within each facility mentioned above
-        From the facility's schematics obtained in Step 5, create Systems within each Group, with suggestive descriptions
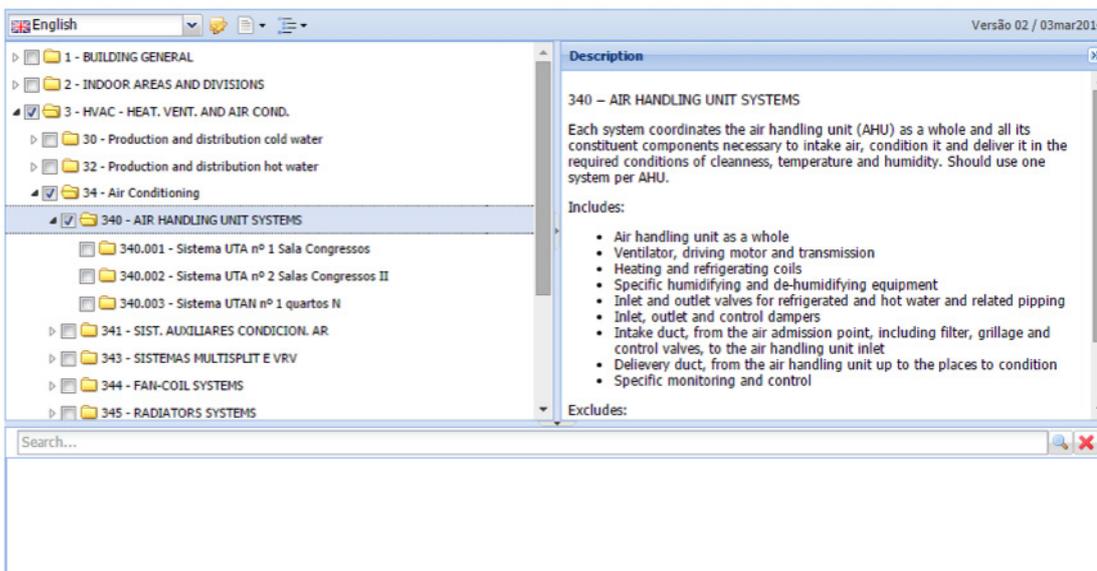
Source: FSys – Facilities Systematization (http://www.manwinwin.com/bfo.htm) – available in English language

Step 7 – Record Maintenance Assets in the CMMS

-        Validate information collected in Step 5: you should go there to check, confirm, verify, assess the condition of the equipment – in some cases, this leads to some corrections
-        Record the Assets in the CMMS, including:
-        The equipment code (coding system set in Step 2)
-        Technical datasheets of the equipment
-        Attach photo of the equipment and/or related documents (manuals, certificates, any document)
-        Label/Tag your equipment with identification codes from your CMMS

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Tips:
- When recording your maintenance assets, we recommend you choose one System (in the Functional Organization) and record all assets in that System – example: the system «Air Handling Units System (AHU)» will only be complete with:
• The AHU itself
• The Ventilator, driving motor and transmission
• Heating and refrigerating coils
• Specific humidifying and de-humidifying equipment
• …

Step 8 – Record materials in the CMMS

- Before any record and before managing any material or spare part, you should set spaces and storage locations within your warehouse(s)
- You then must set a material coding standard
- Record the materials in the CMMS, including:
- The material technical data
- Photos of the materials attached
- Label/Tag your material with identification codes from your CMMS

Tips:
- Whenever possible, relate the materials with the Assets where they are applied/used

Step 9 – Preventive maintenance plans

Prepare the maintenance plan for each maintenance asset; avoid setting periodicities you and your team won't be able to carry out.

Step 10 – Start recording meter readings and running records in the CMMS

- Start recording energy and fuel consumptions (among others)
- Start recording running records on assets whose preventive maintenance is scheduled by records

Tips:
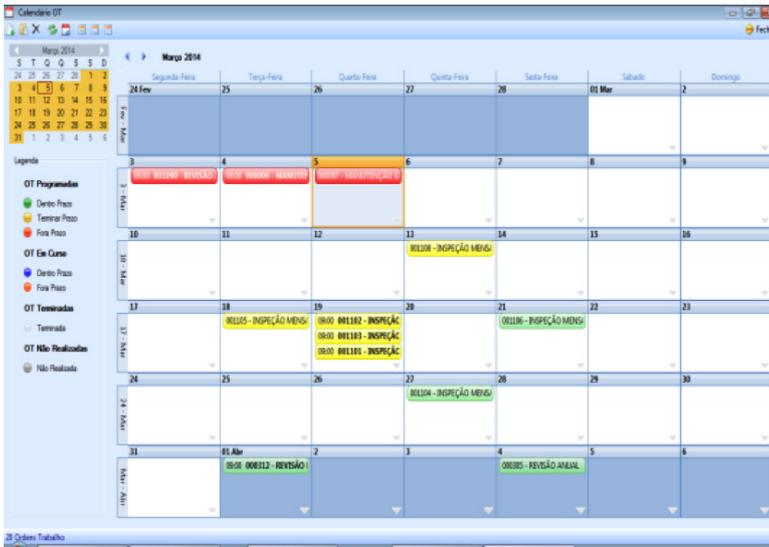- You should at least record 1 (one) reading in the end of each month, minimum.

Step 11 – Implement Preventive Work Orders

From the Preventive maintenance plans created in Step 9, schedule the Word Orders (WOs) in the CMMS

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Tips:
-        Evaluate if you have the necessary human resources to carry out the preventive maintenance plans set in Step 9
-        Absolutely avoid implementing WOs that will result in a Work Schedule impossible to carry out

Step 12 – Implement Corrective Work Orders

Implement procedures in your department so that all corrective interventions are properly recorded in the CMMS

Step 13 – Implement Maintenance requests

Implement procedures in your department so that all maintenance requests are centralized and recorded in the CMMS

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Step 14 – Set your maintenance analysis and indicators (KPIs / Balanced Scorecard)

- Set a Balanced Scorecard (BSc) with the KPIs that your company decides to monitor, starting with the usual ones: MTBF, MTTR, MWT, etc.
- Establish the goals you wish to achieve
- Analyze the data you have gathered and evaluate each indicator's trend line

Indicator	Year N-5	Year N-4	Year N-3	Year N-2	Year N-1	Trend
Annual Failure Rate	103	98	95	97	80	
Uptime (%)	89,4	90,7	91,5	90	93	
MTTR (h)	5	4,5	3	4	2	
MBTF (h)	10	9,5	11	15	19	

When you complete all the above steps, one by one, your maintenance will be completely supported in your CMMS.

To sum up:

Is it easy? Yes.

Is it simple? Yes.

It does however require work and, above all, discipline. But you can have results 1 month after the initial kick off…

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About Navaltik Management
Navaltik Management is a Portuguese Engineering consultancy company, which started off in 1981. It specializes in maintenance management and organization as well as maintenance management software (CMMS) development and implementation. ManWinWin software reported revenue of almost 700 thousand euros in 2014, which represented a growth of 32% compared to last year, it currently has a team of 10 people and estimates to grow more than 20% this year. Today, Navaltik Management has hundreds of clients in more than 20 countries worldwide, including global companies like Alstom, Essilor, Dupont Group, Four Seasons, etc., and it has actual market presence, through partners, in Brazil, Morocco, Romania, Saudi Arabia, Australia and South Africa, all of which report to its Head Office in Lisbon, Portugal. More market representations are projected for 2015 in Asia, Middle East and Spain.