Why companies decide to implement a CMMS.

- A research carried out by ManWinWin Software -

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1. INTRODUCTION

Maintenance Management can play a significant role in an organization's competitiveness, particularly when referring to the implementation of CMMS, which facilitates the management of the maintenance assets and respective works, as well generating analysis and performance indicators – KPI's.

This article has the goal of presenting and analysing the main factors that lead companies from different sectors and different dimensions to adopt a Maintenance Management system, also known as Computerized Maintenance Management Software (CMMS).

We want, with this, to show a pattern regarding the main points that lead to the decision of adopting a system, as well as think about the potential areas that can be improved with the implementation of Maintenance Management Software. With this goal in mind, we have presented in this article the result of 25 maintenance management audits carried out by Navaltik Management, a Maintenance Management Consultancy company with over 35 years of experience.

2. MAINTENANCE MANAGEMENT AND ORGANIZATION

Knowing the answer to fundamental questions like 'what is the cost of downtime?' or 'what is the ratio for non-planned maintenance?' should be standard for any organization. Taking advantage of this information, we will evolve in a way in which maintenance will start being seen as strategic function. In fact, this idea is supported by a PSE study [1], that refers that "70% of organizations believe that decisions must be based on actual data and information".

This should be the general philosophy of an efficient maintenance management in any organization.

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By reaching this stage, a company will achieve a privileged Management position in operational decision making, supported not on fundamental opinions, but on data and analysis.

3. AUDITS TO MAINTENANCE FUNCTION

To address and solve the maintenance problems of any company, you should, first, clearly identify those problems and their causes. Only then, identify the possible solutions for those identified problems.

So, 'auditing' the maintenance function is essential in order to identify its strengths and its weaknesses, through a clear, impartial and constructive analysis. After this diagnosis, a set of recommendations are suggested to improve the Maintenance Management, both through the optimization of current procedures and the incorporation of new ones.

The audits that work as a basis to this study were performed by ManWinWin Software's consultancy team, consisting in an on-site evaluation to a set of 9 parameters (shown in Picture 1) that subdivide into approximately 100 evaluation criteria. These audits to the maintenance function can be carried out in the beginning of a project or in any other appropriate moment that follows.

Picture 1 – Evaluation parameters of the audit of Navaltik Management to the maintenance function

4. DATA ANALYSYS

In the observation of the audit results, we analyzed about 100 points. We considered 14 points as having tendencies and behaviour that classify them as relevant for the creation of a pattern – that we will present further below.

So, according to the order of the audit, the following points are the most relevant and most illustrative of the companies evaluated:

- 52% do not have a list of technical features of their equipment;
- 75% do not plan man-power, spare parts needed or supplier services for upcoming work
- 64% do not record the resources used in the work performed (man-hours, spares, ..);
- 60% do not analyze the equipment's maintenance history;
- 72% do not calculate the real maintenance costs;
- 64% do not use the maintenance history to optimize the maintenance plans;
- 72% do not have an IT system to record maintenance requests;
- In 56% the maintenance requests are not recorded by production staff / clients;
- In 64%, the Stock Management system is not connected with maintenance;
- 68% do not have the relationship between spare part – Equipment where it's used;
- 60% do not control the Current stock level regarding the min / max stock levels;
- 56% do not perform the daily record of man-hours (MH) of their employees;
- 68% do not make decisions based on the history of the equipment;
- 56% do not have a set of maintenance indicators;

Other points could – and probably deserved to be – highlighted. However, having in mind the initial goal of this article described in the first chapter and based on what was said above, we consider appropriate to select the five main factors that lead companies to the decision of adopting a CMMS, and why they stand out against the others.

Why five? Taking the risk of over simplifying, and eventually even losing information, it is our belief that this helps keep focus on the most representative factors that this article proposes in the first place.

So, based on the opinion of the authors, two basic principles were taken into account (in a collective way) on this choice: the level of importance of the deciding factors and the ability of these factors to be improved with the implementation of a CMMS.

This way, briefly, we present the following (Picture 2) five main aspects that make companies decide to implement a CMMS.

Picture 2 – Five main aspects that make companies decide to implement a CMMS

We will explain the foundation of the selection we made:

For the first point, directly related with the equipment list, we noticed many companies' explicit need to have the **identification and technical features** (technical datasheet) displayed in a centralized way, as well as **fast access to the complete list of equipment of the facility**. This saves a lot time in searches related with technical sheets, documentation, planned work, maintenance history of the equipment, spare parts applied to this equipment, etc. …

By not planning man-hours, spare parts and/or supplier services, there can be a significant negative impact regarding lack of productivity inside an organization. A CMMS might be of great assistance regarding this point, allowing the planning of all activities and tasks of preventive and/or corrective maintenance – with estimates for man-hours required, spare parts required and/or service required from suppliers – as well as the planning of maintenance work according to equipment availability.

Regarding maintenance requests, it is a fact that maintenance requests are present in most companies, although they are still carried out in a rather old-fashioned way. Therefore, it becomes increasingly clear that this is one of the most evident reasons in terms of deciding factors in the decision to implement a CMMS, as it is one area that will be highly improved with a software, namely in increasing productivity and reducing

significantly the bureaucracy level. Implementing a proper maintenance requests system allows the company to faster responses to these requests, guaranteeing, simultaneously, that no information is lost during the request / response process.

Other advantages of this maintenance requests system can be pointed out, specifically: keep track of the requests (Who? What? Why? Due when?), real-time follow up of the process and make way for the calculation of the Mean Waiting Time (MWT).

One of the most important aspects, perhaps the most important one, is the company's need / desire to **make decisions based on equipment history**. If the information is recorded in the maintenance software in a disciplined way, the complete equipment history is automatically generated, which allows users to have the necessary information that leads to better technical and economic decisions.

Finally, and directly related with what was described above, the maintenance indicators are of extreme importance, considering that they allow the quantification of objectives. This feature of a CMMS basically translates these objectives into numbers (= goals) to facilitate the monitoring of the evolution over time and point out the grounds for improvement [2].

5. FINAL CONSIDERATIONS

Even though based on quantified information, the selection of these five points was also based on the opinion of the authors, therefore, the selected topics present a certain degree of subjectivity, that does not rule out the fact that other points could be considered.

Therefore, we suggest the possibility that this subject is explored in depth, in order to present different points of view and/ or the analysis of a different dominion than the one considered for this article.
The large number of implementations performed by Navaltik Management, confirms that the five points selected will be the most decisive regarding the decision to go for a CMMS, considering that they have been the parameters that the managers of these companies wished to see optimized.

However, we were able to verify that the control and definition of a set of maintenance indicators is one of the last points to be improved, considering that in order to generate reliable indicators, it is absolutely critical that the management system implemented is in fact being used successfully in its main areas (equipment list, work orders and stock management), and this is not always the case. Additionally, in order to produce good indicators, it is mandatory that information regarding the maintenance activities is recorded in a disciplined manner, some good examples would be: Maintenance times, costs, used resources, equipment downtime, etc. This is only achievable through the disciplined usage of the software.

It is important to understand that the simple fact that implementing a CMMS will not necessarily lead to better results, or to solving existing problems in the core of the organization. The main function of a Maintenance Management software is to support the manager in his daily tasks, this meaning that it is necessary to make some changes in the organizational culture and procedures, in what maintenance is concerned. Without guaranteeing this, very little will change with the implementation of a Maintenance Software. But, if this change is carried out, the first barrier will be overcome, and the rest of the process will happen naturally.

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