

Managing the Maintenance Warehouse through an ERP (Enterprise Resource Planning) or through a CMMS (Computerised Maintenance Management System)?

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During my professional activity as maintenance organisation and management consultant, I had the opportunity to visit hundreds of maintenance warehouses. I can confirm that I have seen (almost) everything over these more than 20 years of experience. I have seen clean and dirty warehouses, tidy and messy, organised and disorganised. Well, good and bad examples. There are many factors contributing for making difficult the apparently simple task of storing items in boxes or shelves, keeping an updated record and an adequate valuation of stocks. Those factors vary, not only with the type and rotation of the stored product but also according to the activity sector to which they refer. Not wanting to generalise and knowing the risk of being misunderstood, I leave here some clues for thinking:

- ✓ No warehouse works (well) without having a person between the item and the final consumer. Whether in a maintenance warehouse, in a pharmacy or in a grocery store, all warehouses have people responsible for physical inputs and outputs of stock. There are more advanced solutions, using new technologies where this principle may not apply.
- ✓ A well-managed warehouse allows high efficiency gains and cost reduction. Part of the success of IKEA (known Swedish furniture brand), for example, is due to an efficient stock management combined with a constant patterning of shapes and discipline in the entire procurement process.
- ✓ It is not easy to manage a warehouse, especially a maintenance warehouse
- ✓ A good warehouse management requires a lot of organisation, tidiness (of the warehouse), discipline, time and dedication.

I will now explain what made me write this article. We know that managing a maintenance warehouse, even with an adequate stock management software, is not an easy task. However, it is common for us to hear “...we record inputs in the ERP and outputs in the CMMS... then we integrate everything...” or “...we purchase in the ERP and, when we receive the items in the CMMS, the status of purchases is updated in the ERP...” These sentences are, to say it ‘lightly’,

dangerous because they involve difficult IT development and sometimes they are impossible to accomplish. Managing a warehouse through two systems, an ERP and a CMMS, is a complex task and a source of problems that drags itself in time until another solution, more effective and more practical, prevails.

The procurement in maintenance comprises, at least, the following processes:

- ✓ Structured encoding in classes and families to facilitate the materials management.
- ✓ Purchasing process. Everything that is purchased should be ordered, upon prior negotiation with the supplier.
- ✓ Physical reception of items (inputs), recording the respective purchase.
- ✓ Tidying away (stowage), localization and labelling.
- ✓ Recording consumptions (outputs) in work orders or cost centres.
- ✓ Returns to suppliers and to warehouse.
- ✓ Inventories to adjust deviations between the system and real stock.

The processes described in the previous point are interrelated and interact in a relative complex way in any ERP, CMMS or other solution that is used for the IT procurement management. Trying to distribute the processes above by two IT systems is possible, however, it requires an extreme care and a thorough cost/benefit evaluation of such solution.

I truly believe that the correct and effective management of stocks should only occur inside of a single IT system, be it an ERP, CMMS or another and I point out, next, the only scenarios that I preview as possible, warning for the following implications:



Purchasing and stock managed only in the ERP

- ✓ The process of purchasing is totally managed via ERP, but purchasing requests can have origin in the CMMS.
- ✓ The physical management of stocks is totally done inside the ERP
- ✓ A “mirror” of items is created for the CMMS – this means a simple IT interface that updates the CMMS with the information that comes from the ERP (where the Stock is

managed): updates the stock items list, the costs, item codes, descriptions, etc. It is a simple procedure with resource to triggers (or Excel spreadsheet, or other IT technical solution).

- ✓ It is also necessary to mirror consumptions in the CMMS, in other words, Stock Outs from the ERP must indicate *where* the Stock Item will be applied in maintenance (work order or cost centre) and this Stock Out will automatically be updated the CMMS (in the work order or cost centre where the material is applied). This task is simple as long as we create a new field – called «CMMS Work Order», for example – in the Stock Out *form* of the ERP and we carry out the necessary connection with the CMMS.

Purchasing and stock managed only in the CMMS

- ✓ There is no connection to the ERP. The two systems run independently.
- ✓ In the ERP, we consider that all the material is consumed (to one or more Cost Centres) during the invoice reception/payment.
- ✓ In the CMMS, everything works as expected.

Purchasing managed in the ERP and stock managed in the CMMS

- ✓ Purchasing process remains in the ERP.
- ✓ There is no stock in the ERP, it is considered that all the material is consumed (to one or more Cost Centres) after being purchased.
- ✓ All the stock management is recorded in the CMMS. The inputs are recorded based on the physical reception of items.

Conclusion

Assuming there is an unavoidable need of distributing the processes of stock management by the 2 systems – ERP and CMMS, it is possible to decide on the development of integrations, having in account that they are always complex IT developments and that they depend on the constant updates of both systems (the integrations also need to be constantly updated). Furthermore, in my experience, I have seen that most of these integrations, after being decided, often extend in time and are not even carried out.

However, if it is decided to integrate both systems, it is recommended to hire specialised companies with experience in the development of such integrations to actually carry them out.