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PROJECT GUIDE

FOR THE SUCCESSFUL IMPLEMENTATION OF A
WAREHOUSE MANAGEMENT SYSTEM (WMS)

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WAREHOUSE [][®]
LOGISTICS

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BACKGROUND OF A WMS IMPLEMENTATION

The implementation of a (new) warehouse management system either happens for the first time or occurred about ten years ago. This means that there is usually very little or no experience to draw upon for such an extensive and challenging project.

In addition to transforming internal logistics into improved or new processes, procurement and distribution processes are also usually affected which has an impact at both the administrative as well as operational levels. Customer requests can be answered more promptly through the use of real-time postings and accurate stock tracking. Optimized and standardized processes mean that orders can be processed more efficiently with less potential for error. More efficient order consolidation and outgoing goods inspection are also possible in shipping.

The successful implementation of a warehouse management system can improve processes, decrease stock, avoid sources of error, improve transparency across the board, and increase employee efficiency.

The prerequisite for this is the successful implementation of a project for rolling out a WMS up to the go live and standard operation phases. This project needs a well-defined project proposal as well as a clear project plan with defined and realistic milestones, work packages, dates, and responsibilities. Create a project organization chart! A central component of the proposal must be active project controlling which captures the costs as well as the dates and functional requirements. Special attention has to be paid to the impact that project changes (change requests) have on the dates and costs. This is as much your responsibility as the client as it is the WMS vendor's responsibility.

Often WMS projects are only rolled out successfully after the planned implementation time has passed. Delays and budget overruns are not uncommon and sometimes to a considerable degree. But what are the causes? And how can they be avoided?

The target audience for this document is all companies who are implementing a (new) warehouse management system, replacing an existing one, or planning to do either of these in the future.

The following 10 points will identify for you, as a client or as a vendor, the key challenges and actions required for the successful implementation of your WMS project!



1. PROCESS UNDERSTANDING (BUSINESS PROCESSES)

The project stakeholders have a different understanding of the tasks and the fundamental concepts. The client knows their current processes, the WMS vendor thinks about the future processes.

This is why you need to create a detailed set of specifications in which you define WHAT the expectations are for the future WMS. Work together with the vendor you selected to create a glossary that explains the specialized logistic and company terms that are relevant for the project. For example, you could use the VDI Standard 3601 "Warehouse Management Systems" for the glossary and for help structuring your document. Create the specifications with the vendor after the contract has been awarded to define exactly HOW the desired functionality and processes should be implemented. Make sure that all participating departments are integrated into the specifications. And it is essential that you get rid of old habits and customs. Not everything that was "done that way in the past" is the most efficient way for the future. Another important aspect is determining the quantities (for example, material, order items, resources) and the required throughput for deriving suitable material flow and optimization strategies. When creating the specifications make sure you select the right ratio of standard to custom software. Many requirements can be implemented in a slightly modified form – and for a much lower cost – through the standard version offered by the WMS vendor.



2. COMMUNICATION

»We need to discuss that again.«

»That is not what we agreed upon.«

Regular communication about the status of the project in conjunction with verification of the defined processes and proper documentation ensure that any necessary changes (change requests) are identified at an early stage and the corresponding actions can be taken. A project management team needs to be established and the tasks and responsibilities for both sides have to be clearly assigned. The earlier that mistakes or omissions are identified, the earlier and more cost effectively they can be corrected. This is why project management costs usually pay for themselves. Make sure that the responsibilities on both sides even out so that all “gets” are covered by “provides”.

Do not forget to involve all employees early on (from warehouse workers to management) to create trust in the targeted solution and to counteract resentment and fear – even the fear associated with the capturing of personal data. Make sure you use the right language for each target group – one that both sides can understand.



3. AVAILABILITY OF THE INVOLVED EMPLOYEES

»Daily business still has to go on.«

A project as big as the implementation of a warehouse management system is not just carried out on the side. Tasks have to be clearly assigned to people and the essential project team members need to be released from at least some of their normal duties to ensure that they can be part of the project for the long term and at a consistent level. This includes the project manager as well as IT specialists and the employees who are responsible for customizing the Enterprise Resource Planning (ERP) system. Include vacation and potential absences in your plan and name the alternates for each team member. To help ensure that the project stays on schedule it is very important to keep the decision makers up to date on the status of the project and/or get at least a partial transfer of decision-making authority to the project team members.

4. INTERFACES WITH / CONNECTIONS TO UPSTREAM AND DOWNSTREAM SYSTEMS

A WMS usually receives its orders and information from an upstream ERP and coordinates or transmits transport orders to a downstream Material Flow Control System (MFCS). Only business processes that have been agreed up and defined in detail can be implemented correctly later. Will all types of orders be captured? Will all incoming and outgoing data be described fully? How should each system react to (status) notifications and responses?

Involve all of the relevant technical departments early on so that it is at least possible to implement all of the current processes in the future. At a bare minimum, the new interfaces should be defined in detail in the specifications and you should ensure that requirements are implemented as early as possible, for example for the ERP system and the MFCS.



5. MASTER DATA, TRANSACTION DATA, AND THE MIGRATION OF OLD DATA

Essential to the implementation of a new WMS is access to reliable master data. An incorrect weight or measurement can result in a half-filled shipping box or the storage of an item in the wrong bin size. If the wrong number of items is in the package or the loading device then it is possible that the customer will not get the amount they ordered. Check to see what master data and transaction data is available and what is missing and make someone responsible for this task. The validity and completeness of the data should be verified as early as possible. A physical inventory count should be conducted before the go live of the new WMS to ensure that accurate and current stock levels are used.

6. TRAINING / QUALITY CHECK

»And what do I do now?«

»This is not how we thought it was going to be«

This project phase should be carried out in parallel with the project. You should actively involve both the key users and the operational warehouse personal because the administrative employee does not always have the same level of knowledge about the operational processes or the other requirements as the forklift driver does. The more that the employees trust the system, the more confident they will feel using it later. If training is given too early, the employees will forget it before they need it. If training is given too late, uncertainty can become a hindrance. Make sure that you include training in the project plan. One best practice in this area is the “train the trainer” concept where the WMS vendor trains the relevant key users and they in turn train the other employees. Verification is then done to make sure that the information and knowledge was passed on properly. Proper training is key to the successful implementation of a new system.



7. TEST PLANS AND TESTING

»That should work actually.«

The software tests that are going to be carried out need to be described and defined in advance. What should be tested? What test data is needed for what test period? How is the test data acquired? How will testing be done and who will do it? What error or exceptions can occur? How should the WMS react? What are the expected test results? When is a test considered a success and when not?

Tests have to be prepared and executed carefully and it has to be clear who is responsible for them. Develop a test plan that is aligned with the software implementation of the processes and clearly describes and documents the testing requirements, the required test data, and the test results. Coordinate the tests with the project plan. Have the bin locations and loading devices already been identified? And do not forget the integration and migration test!

Define general error classes and assign specific errors to them. It is simpler to talk about error classes than specific errors. For example, if an error cannot be bypassed using an acceptable level of personnel or technical resources (Class 1) is a workaround required (Class 2) or is it just a case of a dialog box being in the wrong position (Class 5)?

»Everything used to work.«

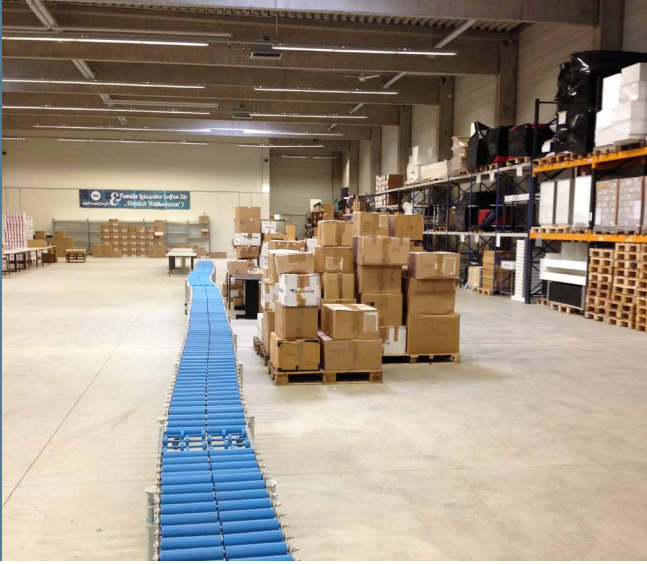
Even if all of the individual tests are carried out without any issues and the desired individual results are achieved this is not a guarantee that all processes and functionality will work together in harmony in production at full capacity. That is normal! This is why you should conduct a go live test before the system goes live and preferably at full capacity. Sometimes it is necessary to define time requirements for this test as well. What is the maximum amount of time the system should take to accept orders or optimize the order sequence? Is the replenishment available in the picking area when the picker needs the items? Is the agreed upon throughput achieved? Decide based on the error classes if or under what conditions the (partial) acceptance and approval for the go live is granted or not.



8. ESCALATION MANAGEMENT

Opinions often differ on problems with the project implementation and especially with the milestones, which coincide with payment obligations. A clear definition, regular communication, and the courage to adapt already made agreements to the circumstances will usually prevent escalations from occurring. An early go live demanded by the WMS vendor or the customer or the delay or refusal of an acceptance based on minor details should be avoided at all costs.

Escalations should be avoided as much as possible through solid project management and communication. If an agreement cannot be reached within the project team, then previously agreed upon escalation steps should be activated (for example, a steering committee) which should not be made up of the same group of people as those implementing the project. If the escalation happens technically, pragmatically, and professionally; then a mutually acceptable solution is almost always found. The termination of such a large project is usually the most costly solution for all involved parties.



9. GO LIVE AND START-UP SUPPORT

The decision to implement a new WMS in stages or using a big bang type approach and doing it in one step was made long ago of course.

Normally the commercial use and the transfer of risk of the new WMS starts after the acceptance and when it is put into operation using real data after the go live. New process and functionality become operational for the first time with the go live and some of these connect to technology that is not yet trusted (such as radio data transmission, pick to light, pick to voice, and automatic warehouse technology). This opens up the possibility for new sources of error for which there are no proven Plan B solutions in use: this can happen even with the best preparation. This often results in uncertainty in the process so you need to plan for sufficient capacity to compensate for the initial delays. Focus on the source when troubleshooting problems. Inform your customers and business partners ahead of time that there might be possible problems like delivery delays in the transition phase.

It is important that the transition to standard operation is well organized and that the go live team gradually withdraws from the process.



10. OPERATIONAL CONCEPT AND SUPPORT

»Who is in charge now?«

»That needs to be clarified immediately.«

Another important component of the entire project is to answer the question about who will support the hardware and software (computers, servers, data radio devices, network, warehouse technology, and so on) after the go live and to define this support. The scope of the support has to be aligned with your individual requirements, including the agreed upon availability and guaranteed response time of the WMS vendor. If you are dealing with more than one vendor, then there has to be a clear definition and assignment of the services agreed upon in the contract.

Make sure that the support times meet your business requirements. Do you have just one shift or do you have three? Do you need to be able to speak directly with the contact person for your project when a disruption occurs or is a customer care centre good enough?

The individuality of the processes, the required availability, and the maximum allowable down-time are all criteria that need to be taken into consideration.



SUMMARY

Take the implementation of a WMS seriously. A project of this scope needs careful planning and solid project management with a motivated and efficient project team and full support from management.

Always keep in mind that you and the WMS vendor have mutual dependencies. You will be working with the vendor for about ten years with the common goal of a successful WMS project: to achieve this you will need great communication and the ability to detect and resolve problems early.

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WAREHOUSE [][®] LOGISTICS

This project guide for the successful implementation of a warehouse management system is a joint document of Team warehouse logistics at the Fraunhofer Institute for Material Flow and Logistics (IML) in Dortmund and the well-known WMS vendors named below. The target audience for this document is all companies who are implementing a new warehouse management system or replacing an existing one.

Everyone who was involved in the creation of this project guide has extensive experience in the implementation of WMS projects

