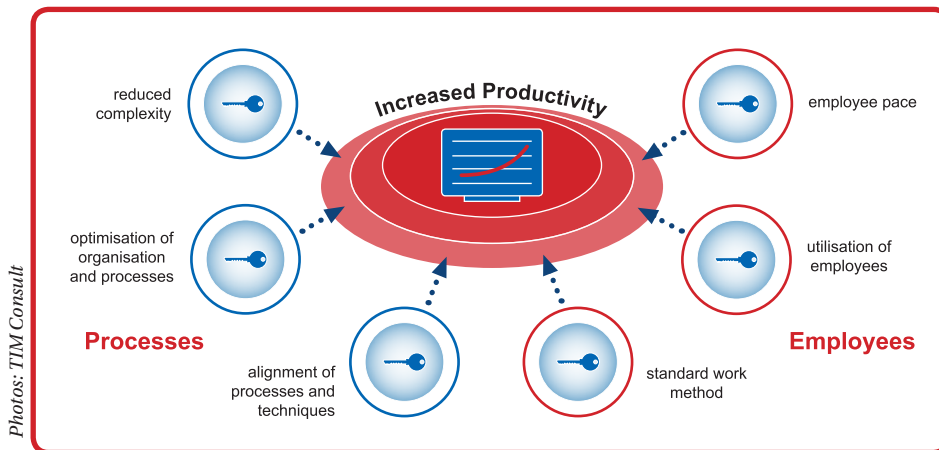


# Tim Consult's inventory audit raises the potential for productivity growth in warehouses



Marco Krämer

*Which options are there to improve productivity in warehouses and in order picking? A consulting firm has developed an audit that shows the individual options.*

Today, those in charge of warehouse logistics are faced with constant cost pressure and the demand for ongoing optimisation. They need to find answers to the increasing service requirements and to respond flexibly to structural changes so that their warehouse logistics can achieve a good position in the competition. This is not only a clear management task but also a

challenge that is not easy to deal with due to the often limited transparency of warehouse processes, process times and the way of working of employees.

## An inventory audit can increase productivity in warehouses and in order picking

### Inventory audit as a tool for optimisation

In order to support this task, the consulting firm TIM Consult has developed an audit method allowing potentials to be identified and properly used by means of an independent and neutral analysis. This approach is not aimed at examining individual workstations or employees but rather at examining complete areas of activity. The overall material flow, (IT) processes and ways of working are analysed and evaluated. The aim is to reveal visible and hidden potential for improvement and to implement related improvement measures. The goal is therefore to achieve maximum per-

### Focusing on processes and productivity

formance and quality from an existing warehouse in order to ensure company growth in the future with approximately the same resources in terms of staff, surface area, set-up and technology. In this way, investments can be avoided and storage costs can be reduced.

The inventory audit developed by the consulting firm concerns warehouse logistics — from incoming goods to order picking and shipping areas — from two different perspectives. Within the audit process, the material flow, the applied techniques and the general processes are examined, including upstream and downstream processes. In this way, process-related excess resources (“wastage”) can be identified (**Image 01**).

The second step involves further examination of the individual components of productivity, such as operating speed, workload and applied work methods (**Image 02**). Thanks to process-related observations and interviews during opera-

tions, potentials can be identified and, based on further quantitative analysis, also evaluated. Subsequently, solutions and necessary measures can be developed and documented in a package of measures, together with an evaluation of implementation complexity and of the expected economic benefit (ROI), and prioritised accordingly (**Image 03**).

Those in charge of warehouses are constantly surprised by the results of the inventory audit and by the visible and hidden “wastage” during warehouse operation. The reasons for suboptimal processes are as diverse as solution approaches.

### Example 1: avoiding unnecessary process steps

In the case of a company operating in the field of paper, office products and stationery, for example, unnecessary handling steps

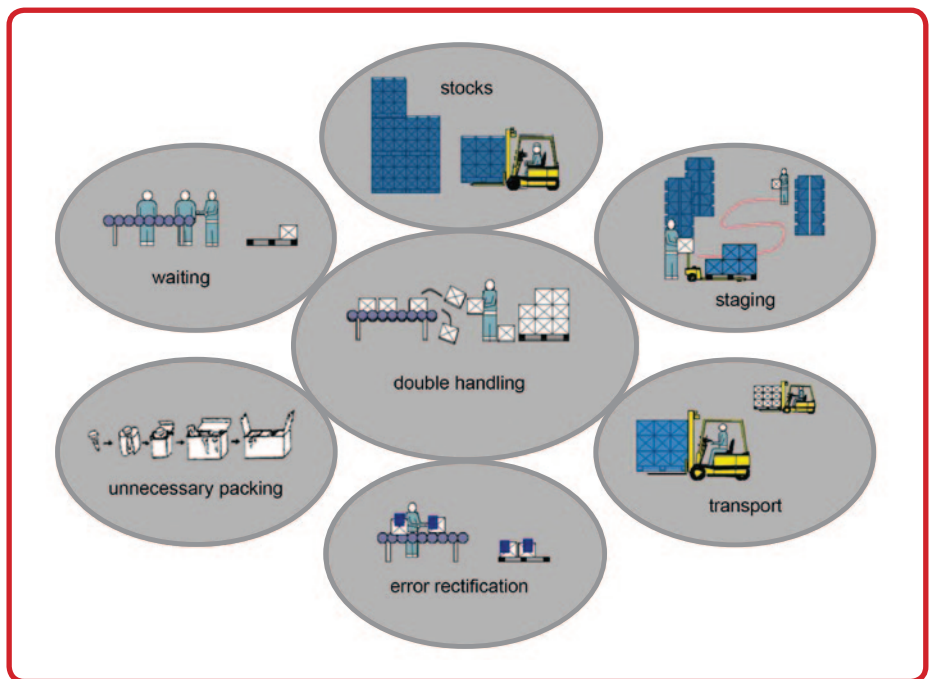
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## About Tim Consult

Tim Consult GmbH based in Mannheim, Germany, is an international consulting firm, with over 25 years of experience, for company management, logistics and public management.

The Business Logistics centre of the company offers consultancy for Value Network Management — the company-wide design of goods-related processes and international value-added networks. With its Public Management centre, Tim Consult offers consultancy with the management and implementation of public tasks. Customers include global players, small and medium-sized businesses and the public sector. Tim Consult takes responsibility for various consulting projects, from conception to realisation.

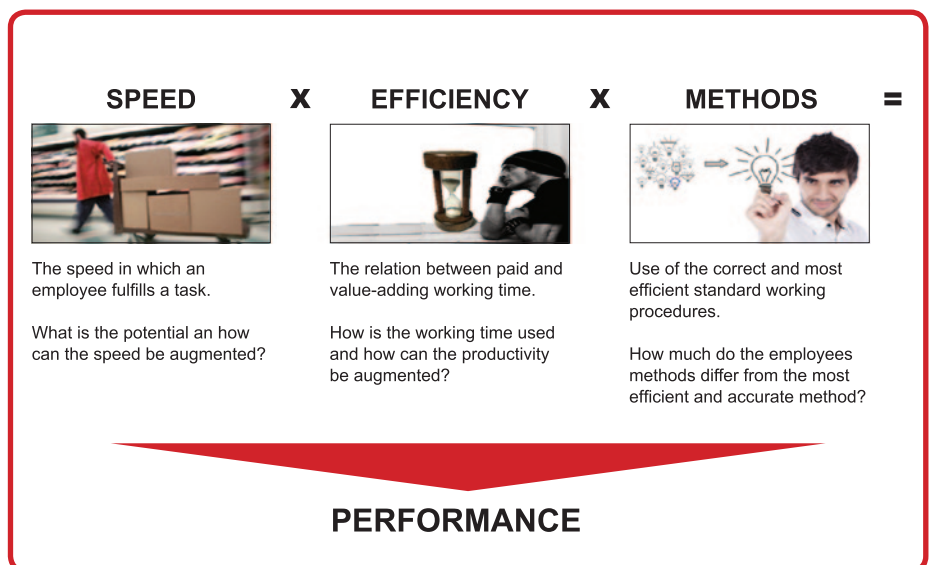


**01** The handling of products and packages entails some common mistakes that affect the productivity of processes

during the order picking process resulted in low productivity of the carton aisle storage system. Individual items for sale and the entire outer cartons of an item were removed from the same aisle. Outer cartons had to be opened with a knife during order picking to remove individual items for sale. The staff had to remove the opened cartons from the warehouse aisle in order to reach the closed outer cartons of the same item that were located behind (entire carton removal). These steps were carried out during the critical time of the order picking process, whereas the goods should have been prepared accordingly for order picking during the replenishment process.

Furthermore, there was no pre-shipping sorting at the shipping area, and order prioritisation and processing worked only partially. Since the shipping cartons were not supplied in sequence for a target pallet, the staff had to repeatedly bring the target pallets to the removal area, until they were finally available for loading.

The inventory audit resulted in the suggestion to improve order dispatching and processing, as well as the order picking process. This includes, for example, batch picking of the entire cartons directly from the pallet or from separate aisles. Non-productive processes, such as individual removal during order picking, can therefore be eliminated and replenishment movements can be reduced. Thanks to sorting paths for



**02** The 3A-analysis method is used for this audit

shipping, multiple handling at shipping areas will no longer be necessary in the future. In this way, productivity in these sections can be increased by about 35 percent.

### Example 2: ergonomic workstations improve productivity

A comprehensive inventory audit takes into consideration the actual warehouse processes, as well as the working environment and workplace layout. For example, in the case of a provider of

electronic components, the inventory audit showed that the staff's way of working at the incoming goods area causes health problems, thus leading to a high rate of absence due to sickness.

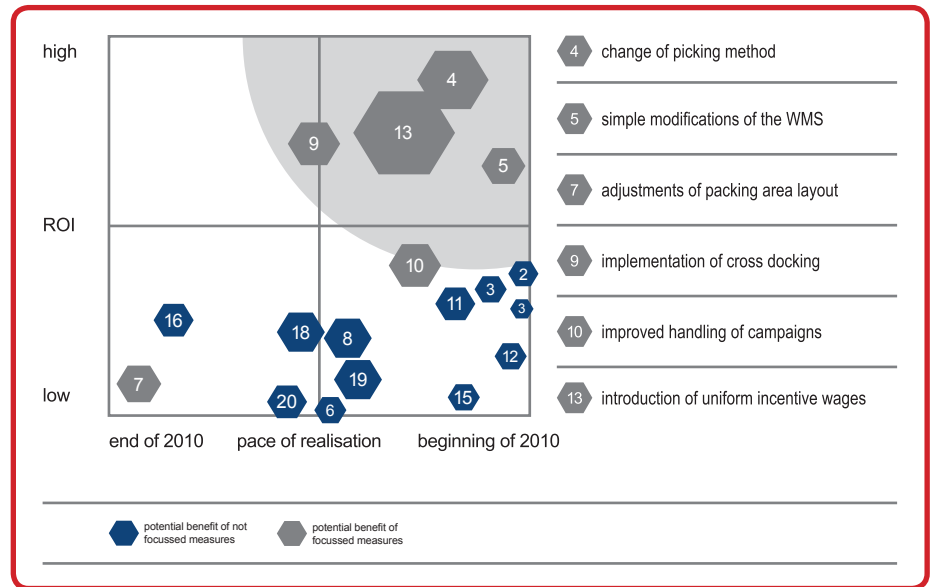
Here, palletised cartons of incoming goods were sorted according to product and batch number on target pallets, which were located on the floor. This procedure was not optimal in terms of ergonomics and productivity. In addition, the receipt of goods often lasted several days. A solution was proposed, which entailed ergonomic worksta-

tions on a platform with scissor lift tables and conveyor technology. In the future, warehouse staff will be able to de-palletise cartons of incoming goods at an ideal working height and store them in a carton warehouse. Thanks to these measures, productivity increases by about 35 percent and the absence rate due to sickness is expected to drop by a third.

### Example 3: e-commerce makes higher flexibility necessary

Changes in order structure also contribute to making warehouse processes no longer function optimally. Therefore, a multi-channel retailer was faced with the task of achieving radical throughput growth, which mainly originated from the range of value-added services offered and the related elaborate packaging process. A solution has to be found for peak workload periods (e.g. Valentine's Day, Mother's Day or Christmas). This solution should also be able to react flexibly to future developments and require modest investment.

The inventory audit resulted in the suggestion to install multifunctional and scalable workstations, which can be used for processing value-added services but also as packaging and unpacking areas for incoming goods. All workstations were designed with a type of complementary folding table for two employees. The workstation, developed with conveyor technology, is now used for high volumes of orders with increased productivity (two employees). Thanks to the flexible design of the workstations, investments concerning



**03** A guidance model with prioritisation as an example of the results of an inventory audit

conveyor technology and the processing area could be reduced by about 30 percent.

### Conclusion

With an inventory audit, which also incorporates the experiences of other companies and sectors, companies can benefit from neutral, independent and fast evaluation of their warehouse performance. With little effort, they can receive an overview of the strengths and weaknesses and identify savings and optimisation opportunities, which they can then implement according to their goals. Quick improvements or savings can often be made by implementing simple

adjustments and changes. This experience demonstrates that an increase in productivity of up to 50 percent can be achieved for specific areas. The payback period of an inventory audit is frequently less than six months.

However, for each inventory audit, early involvement of employees in the audit process is of crucial importance. Optimisation measures will only be successful if they are backed not only by those in charge but also by the works council and all employees involved.

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