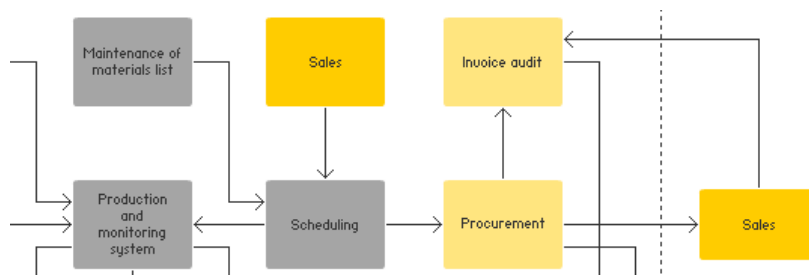


ERP and warehouse management

Efficient management of information and goods

Enterprise resource planning ERP is a description of systems that employ innovative information technology to manage all sorts of areas in companies. Major corporations, in particular, could hardly function without tailor-made ERP software. One component of ERP can be a warehouse management system (WMS). With its assistance, precise warehouse management can be conducted even in the most complex storage and distribution systems. As a result, inventory monitoring can be improved and the entire supply chain can be designed more efficiently.



Physical goods movement and information flow in the ERP system

The characteristics and application areas of ERP systems

One elementary factor in optimizing a company's important core business processes is the fast and precise retrieval, integration and collection of information. Enterprise resource planning ERP is a system that uses modern information technology to manage the functions of various company divisions and to create transparency in the process. Through the use of ERP - and, as a result, a single data model for all company-relevant information - significant amounts of internal integration can be achieved. This is an important benefit especially for international companies. But small and mid-sized companies can profit from tailor-made ERP solutions as well.

For the entire supply chain, an ERP system with a shared data model is a desirable solution - but the implementation of it is extremely complex. The trend toward outsourcing is also raising the system's cost because the number of companies in the supply chain continues to expand.

Advanced planning systems (APS) represent an extension of the ERP in terms of relationships with other companies. These systems represent complex logistics structures and processes in a supply chain, and facilitate fast responses and optimal inventories and capacities. For this purpose, APS uses data managed by ERP systems. In the automotive industry, for instance, the supply chain can be mapped all the way to the pre-suppliers of a system supplier. As a result, critical paths can be recognized and supply squeezes prevented at an early point in time.

The functional areas of an ERP system

The essential business processes in a company can be almost completely covered by new ERP systems, and the execution of these processes can be supported in real time. Different business sectors can sometimes place widely different demands on an ERP system. In response to these needs, major providers like SAP, Oracle and Microsoft offer solutions specially tailored to individual sectors. Such special solutions already are in place for aerospace & defense, the automotive industry, banks, the chemical industry, logistics service providers, telecommunication, insurance firms and universities, among other areas. This graphic shows the functions of an ERP solution provided by SAP.

Efficient storage administration through warehouse management systems

Warehouse management systems (WMS) represent a further evolutionary step from the inventory management systems (IMS) used in the 1980s and early 1990s. The traditional IMS only enabled stored items and storage positions to be administered and conveying systems to be managed. But today's WMS can do much more. Among other things, they permit numerous important indicators to be monitored and develop multifaceted strategies for optimizing the systems in use from these indicators. As a result, complex storage and distribution systems can be easily managed, monitored and optimized.

A traditional IMS was generally used as a "black-box system" that was separated from the central company software. In contrast, the WMS began to be increasingly networked and integrated into the ERP at the end of the 1990s. As modular software, the WMS offers a scalable functional range within the framework of the ERP:

- The core functions of a WMS support the basic processes in every company's warehouse area: e.g., receiving, storage, warehouse management, picking, retrieval, shipping, inventory and forms management.
- The expanded functions of a WMS include batch/serial number management, management of empty bottles and returns. Additional modules offer connections to self-contained software packages like RFID software or pick-by-voice /pick-by-light systems.
- One other important function is support that is provided to the management of linked storage facilities. As a result, the inventories of several warehouses can be balanced with one another or particularly high-quality items can be distributed only upon notification from centrally located warehouses.

Similar to the concept of the ERP, function-adding modules are installed only if the company actually needs the particular service.

Recommended reading

ERP - Tools, Techniques, and Applications for Integrating the Supply Chain |

Ptak / Schragenheim 2003

Supply Chain Management erfolgreich umsetzen. Grundlagen, Realisierung
und Fallstudien | Corsten / Gabriel 2004

Software im Vergleich - ERP mit fortschrittlicher Produktionsplanung: 14

Lösungen für das Supply Chain Management | Albert / Klüpfel / Fuchs / Kaiser
2006

Selecting Warehouse Software from WMS & ERP Providers: Find the Best
Warehouse Module or Warehouse Management System | Obal 2007

Who's who in 3PL WMS Software: Warehouse Management System Software
Solutions for Third Party Logistics Providers | Obal 2004

Supply Chain Management - Optimierung logistischer Prozesse | Arndt 2006

References

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Logistikheute / ten Hompel (Hrsg.)

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