

WHITE PAPER



CHOOSING A WAREHOUSE MANAGEMENT SYSTEM – EXTERNAL OR INTERNAL SOLUTION?

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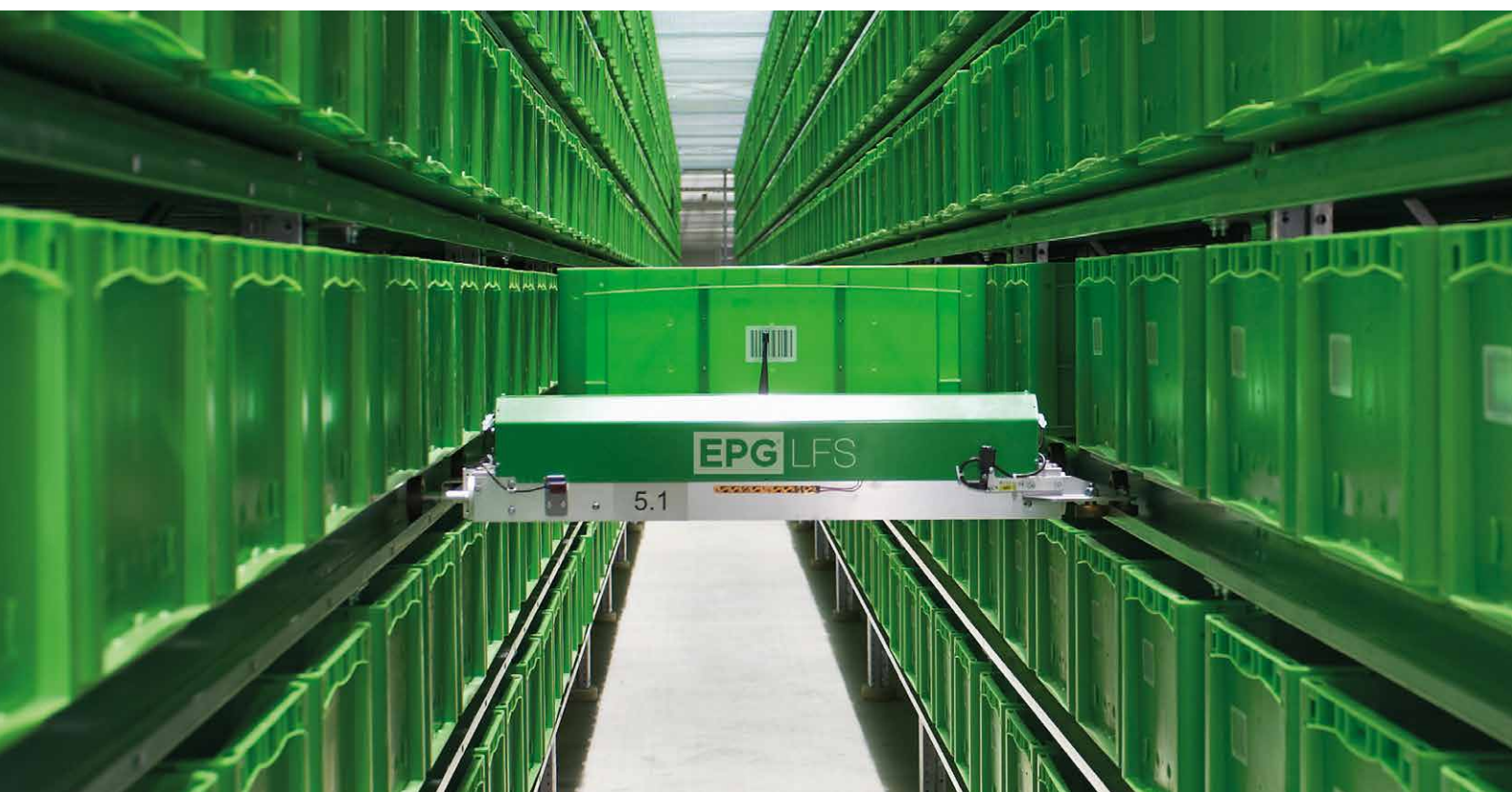
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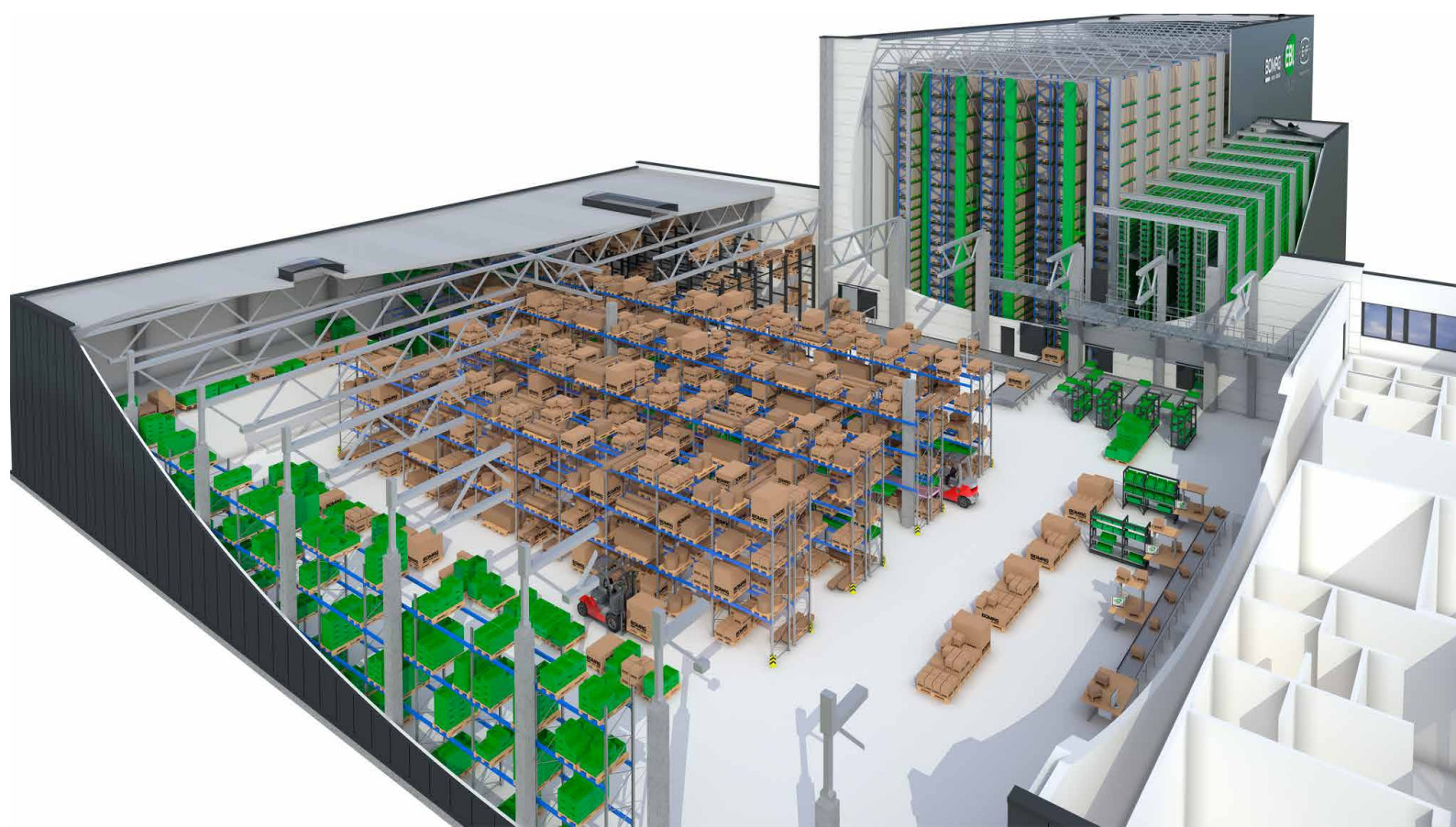


Markets are becoming increasingly dynamic, while expectations in production, warehouse, and transport logistics are growing. Flexibility and speed in warehouse management are becoming decisive factors in a company's competitive edge. But what should managers go for – an integrated solution as part of an ERP package or an external warehouse management system (WMS)?

This is the "million dollar question", says Patti Satterfield, Head of Marketing at Fortna Inc, an international logistics company. Like most companies faced with choosing a suitable WMS, it is a question she needs answered. The fact is that a warehouse management system can improve internal process workflows, reduce stocks, avoid sources of error, improve transparency in all areas, increase employee efficiency and lower costs.

There are proprietary systems, on the one hand, that are part of an ERP package and integrate with the ERP of the specific manufacturer. The best-known example is the software from the Walldorf-based SAP Group, which has dedicated modules for warehouse management – WM as standard and EWM for advanced requirements. Other well-known solution providers on the market are Oracle, NetSuite, Microsoft and Sage.

On the other hand, there are providers who have accumulated specialist knowledge and developed a WMS. These include Ehrhardt Partner Group (EPG), one of the world's leading logistics experts. EPG offers a comprehensive solution for all industries in the form of the EPG Software Suite for cross-industry management of all logistics processes. The EPG supply chain execution system (SES) is currently being used successfully across all continents.



Whether integrated or external, both IT solutions have their advantages, which must be weighed up when choosing your warehouse management system. But which approach is better?

To find out, we need to answer the following questions:

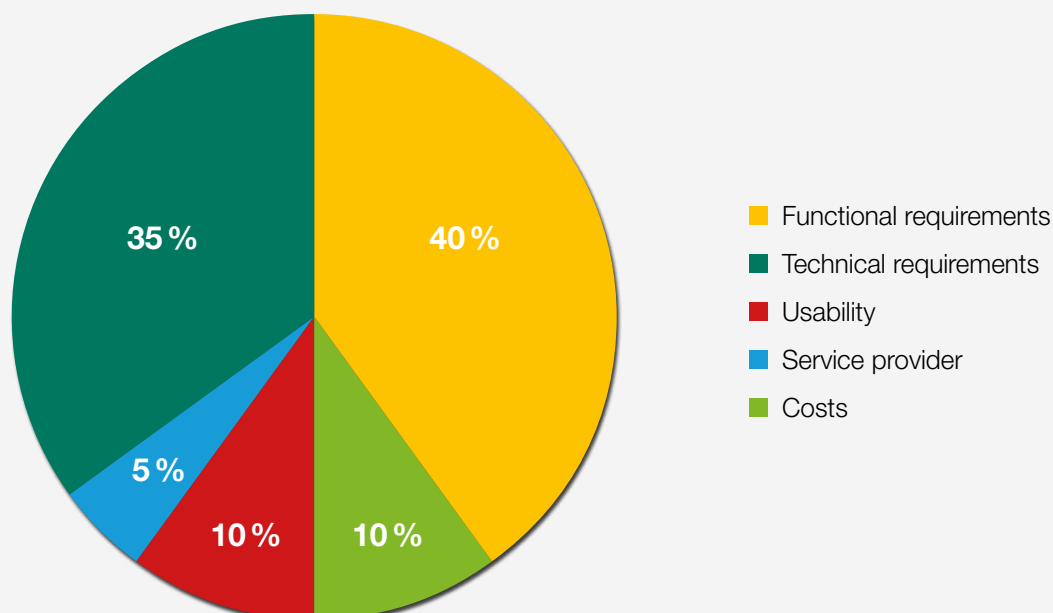
- What system has features best suited to our requirements?
- What system suits us and our existing infrastructure best in terms of how it operates?
- What will it cost us?

Useful steps to make an objective decision include:

- Define measurable variables
- Develop a dedicated matrix
- Weight the identified topics/variables, depending on your own situation (see example graph below)
- Take into account all the different specialist areas (not just IT project management)

To answer these questions exhaustively, we take a closer look at both systems – the SAP solution (internal) and the EPG | LFS from EPG (external).

**Weighting of selection criteria
(warehouse management software)**



Warehouse software is developing very quickly. Even software brought in to companies in the last five years often no longer meets current requirements. New trends, such as Logistics 4.0, smart logistics and big data, are driving forward development and require constant revision of software within companies. The question is therefore what IT systems are better prepared for these challenges – integrated systems as part of an ERP (e.g. SAP) or external WMS systems (e.g. EPG).

ERP/SAP (internal)

Although ERP systems (e.g., from SAP) are the standard when it comes to cross-functional support and organization of all a company's business processes, this is not the case for logistics. Using a common database, ERP connects cross-functional modules for materials management, production, sales, research and development, plant management, HR and finance and accounting.

But to integrate logistics into the ERP world as well requires add-on modules that quickly reach their limits with more complex requirements, such as ever-shorter delivery times for just-in-time deliveries. At SAP, these add-on modules are integrated into the existing IT and logistics landscape and have to exchange data over interfaces with systems that have already been integrated. If the logistics requirements are not precisely defined right from the start, this often turns out to be a costly and uncertain exercise.

WMS/EPG (external)

The EPG Software Suite is a complete solution to manage logistics processes. All logistics processes are controlled centrally via the supply chain execution system – from warehouse management (via EPG | LFS) through material flow control (state-of-the-art material flow controlling via EPG | MFC, including 3D vi-



sualization and emulation) to transportation management (via EPG | TMS, tour planning management and route optimization, including Truck Driver app for smart devices). The solution is flexible, modular and cross-industry. All relevant data throughout the supply chain is available and networked transparently. EPG also supports access to the cloud (via EPG | CLOUD) with comprehensive logistics planning and consulting, as well as tailor-made solutions for logistics hardware and infrastructure.

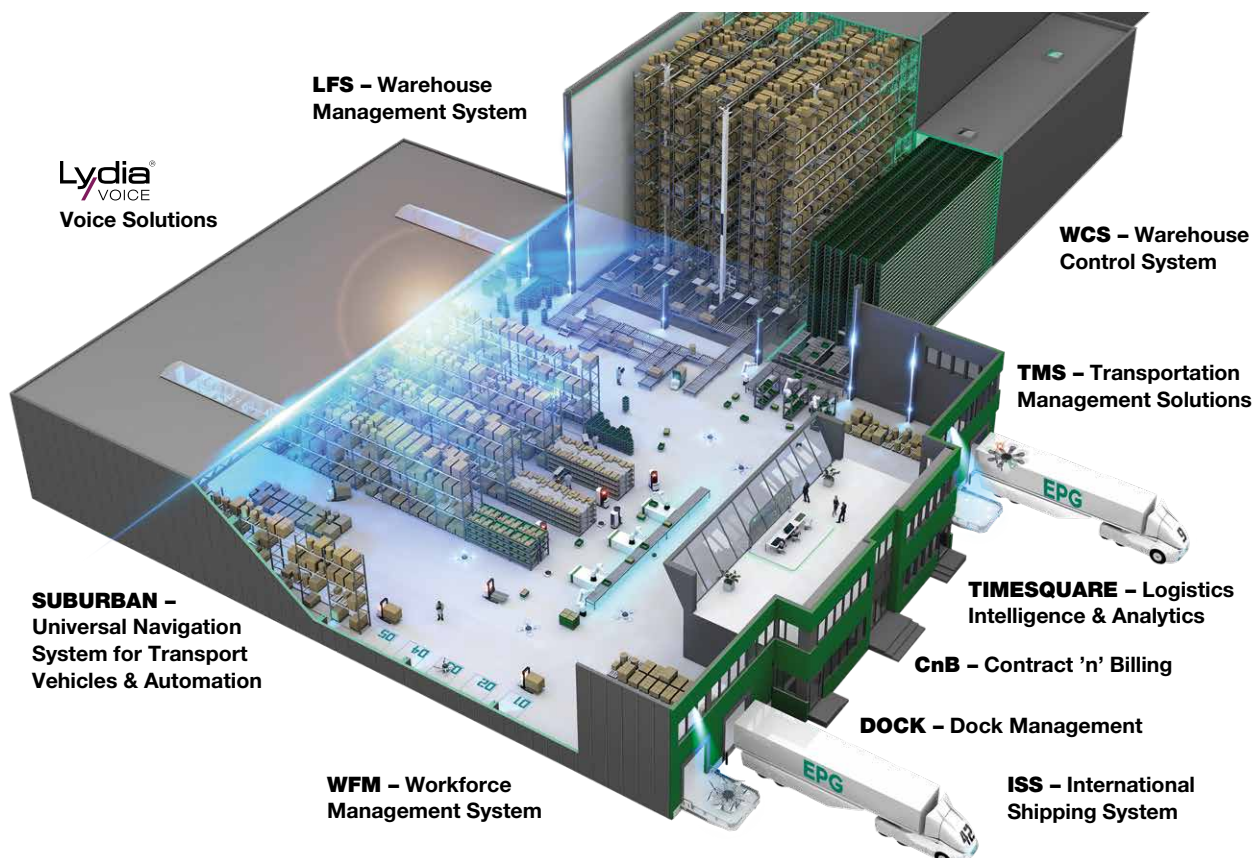
"Modern IT systems are now the decisive competitive factor in logistics, and also the key to meeting the challenges of increasing market demands and the pressure of rising costs. Connecting your supply chain in a smart way is the order of the day, from machines through warehouse hardware and technology, to trucks, and all your electronic resources."

Dennis Kunz,
Marketing Director at Ehrhardt + Partner GmbH & Co. KG

The basic difference in structure is also decisive. Given their core tasks, ERP systems always operate based on document flows, whereas the EPG | LFS is specifically tailored to logistics processes and therefore operates based on movement. EPG | LFS therefore registers and documents all physical work-flows and product processes, as collecting transaction data is essential for logistics.

Consolidate all your requirements and objectives in a specification in advance, where you can set out in detail what you expect from your future warehouse management system and provider. Pay particular attention to the planned software and hardware, relevant services and contractual arrangements. See our "Guide to choosing a warehouse management system" [white paper for the best way to write your specification and to find out what core elements to include.](#)

After you have chosen a provider, you will work with your system partner to create a specification that precisely documents how the required functions and processes should be implemented.



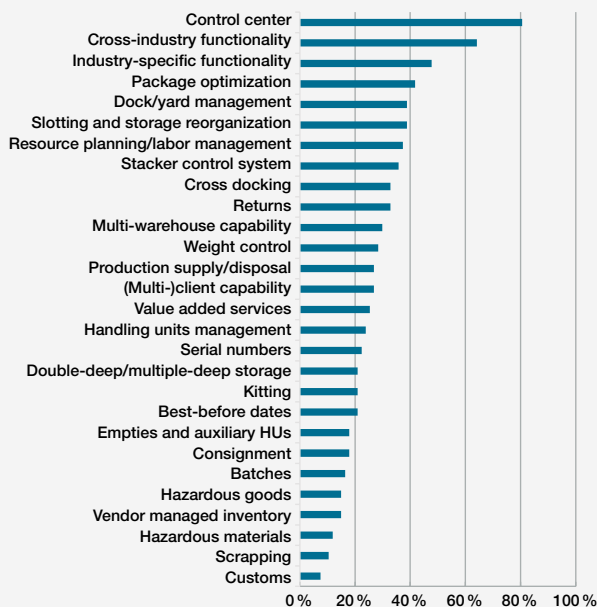
Logistics is the core of every retail and manufacturing company. The tasks that it has to fulfill therefore depend to a great extent on the complexity of logistics processes in the specific industry. A structured selection process to find a suitable WMS tailored to the individual needs of

the company therefore has to clarify current and future requirements. The interaction of higher-level company goals with logistics must also be taken into account.

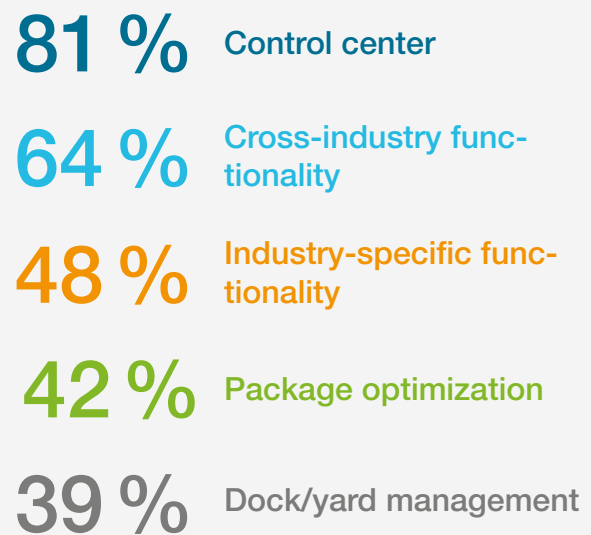
THE STANDARD WMS

FUNCTIONAL DEVELOPMENT PRIORITIES

Development priorities of WMS providers over the next 4 years



Top 5 areas of functional development for WMS providers



Source: Fraunhofer ILM/warehouse-logistics.com

Ask the following questions about software features:

- What customer expectations have to be met now and in the future and how can these be implemented most effectively by warehouse management (e.g., control of warehouse technology in real time and control center)?
- Do putaway/retrieval strategies and order picking processes need to be changed (e.g. with pick-by-voice, cross docking, dock/yard management, and package optimization)?
- How significant is the flexibility and scalability of processes? Think about the future here, not just the present. Multi-client capability, for example, may be required sooner or later when new sites are added or for customization.

Low or high complexity

If complexity at the company is low, it may be enough to set up and use the logistics module from the ERP system that is already being used. To find out if complexity is low, consider your logistics processes in detail to find out, for example, the importance of item availability and on-time delivery. Cost savings by minimizing the inventory should not come at the expense of meeting delivery commitments.

Logistics tend to be more complex in distribution-focused companies, as complexity increases with the volume of throughput and the number of item variants. If it turns out that logistics have to meet complex requirements, the choice comes down to an add-on module from your ERP provider or the software solution from a logistics specialist, such as the EPG | LFS.

You then need to identify the product that will manage the structures and processes in warehouse and logistics most effectively. Avoid deciding early. The goal is to find the optimum solu-

tion. You have advanced requirements if, for example, a large number of different items need to be kept ready for delivery or if demand is subject to seasonal fluctuations. Retail has prime examples of these types of requirements, such as in fashion, the food and drinks industry and the spare parts sector.

Narrower delivery window

However, manufacturing companies are also increasingly affected. In the era of digital orders, products need to reach their destination reliably and – above all – on time. Customers increasingly expect just-in-time or express delivery.

Distribution in particular is seeing more and more new requirements with an impact on logistics. These include more direct delivery to retail, such as chain stores, as well as the challenges of online business on mobile platforms. The result is that the delivery window is significantly narrower – depending also on whether a webshop is for retail or end customers.

Scenario: Logistics 2030

In the warehouse



Warehouse robot



Data glasses

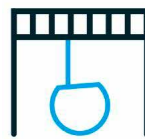


Smart gloves

Between two warehouses or on the way to the customer



Route is planned by an intelligent system.



3D printer prints the goods

Transportation to customer



Drones



Autonomous vehicles

The result is that there are new requirements in the warehouse, where flexible putaway and retrieval are required, including various types of picking, such as cross docking, which may need to operate alongside each other. The expectations for performance of a WMS are clearly increasing as a result, e.g., because of distribution channels to be set up in the future.

Clarify, therefore, whether the software is ready for the future and can meet new challenges with flexibility. Logistics modules offered as part of ERP systems (SAP) are integrated directly into the ERP software. There are advantages to this approach when introducing the software and in terms of user navigation.

As it employs a modular software design, a centralized or decentralized ERP solution can also be used as warehouse management software – but only for straightforward warehouses. (5) Even this software also has to be integrated into the existing logistics and IT landscape on site. A project to integrate the software and optimize the process is then always still necessary. Integrated systems must also exchange data over interfaces.

Standardized interfaces

As many external warehouse management systems have certified interfaces, the difference seems very small. The EPG | LFS warehouse management system was certified by SAP in 1997, for example. EPG | LFS now runs on all common platforms. As standard, EPG | LFS also comes with communication interfaces for all common ERP, WWS and PPS systems, as well as services for use in SOA environments.

Being able to complete a project with the manufacturer of the software is another advantage. The customer has direct contact for possible customizations or special programming. Customers also get access to specific logistical expertise right up to the expertise provided by a general contractor, which can integrate sub-systems and sites. This experience is reflected in the scope of the standard software offering.

The future of logistics

According to a representative survey by Bitkom in 2017, many companies believe logistics will be completely revolutionized in the next ten years. According to Bitkom CEO, Bernhard Rohleder, "drones, autonomous systems and artificial intelligence mean that logistics is not just on the point of optimizing business processes – its a real revolution". Of the companies surveyed, 84 percent are already using innovative digital solutions. 35 percent of companies are using cloud computing (25 percent plan to do so), but only 19 percent are using big data (26 percent plan to do so). 19 percent are also using automatic stacker systems (26 percent plan to do so). Other developments include smart containers (20 percent using, 15 percent plan to do so) and warehouse robots (16 percent using, 9 percent plan to do so), whereas data glasses (8 percent using, 14 percent plan to do so) are still a rarity.

Cross-industry diversity of services

If you want to set a course for the future, you need specialist solutions that meet the complex requirements of an extremely dynamic industry – and software with features that you can modify or add to. Compared to ERP solutions, warehouse management systems from logistics specialists generally have a more extensive feature set. An important indicator of software performance is the customer base of the provider – not just in terms of branch diversity, but also whether the provider has an ongoing relationships with large logistics service providers that work for customers from very different industries.

Logistics is more than a sector of industry. It has evolved into its own discipline that is vital for companies from many industries. As it is always process-based, a new way of thinking has been developed, which is reflected in the software solutions from specialist providers.

When it comes to integration – both logistical and technical – introducing a WMS is never a standalone project. Business programs and logistics sub-systems always have to be connected, whether internal or external. When hundreds of customers use external logistics software that is connected to your SAP system, "Integration" is not really an area where you can differentiate.

Optimization of logistics processes and expertise

A manufacturer like EPG uses its experience from many logistics projects and its direct contact with customers around the world to simplify and shorten implementation. Templates, for example, can be loaded into the software to transfer processes

to companies in the same industry or with similar requirements. Fine tuning is then all that is required in the WMS project itself, as this process can even be used to implement complete workflows.

In contrast to providers like SAP that often leave the project implementation to external consultancy firms, manufacturers of external logistics solution can quickly new take into account the requirements of project customers in their software – across industries and tailored to the customer. Project team members usually have extensive experience in logistics. This practical knowledge always pays off when it comes to development.

Another important benefit of many software systems for logistics is that processes do not have to be programmed especially – the parameters can simply be customized by users. Once an external WMS has been introduced, users can therefore start using the new solution independently very quickly.





There are WMS customers, for example, who set up their own processes. Others bring entire warehouses online for the first time and connect more sites. The software can be configured independently to such a degree that even the software manufacturer does not know all the applications of its own product or all the places the product is used.

Almost all customers report not only that their employees' level of knowledge increases after the software is introduced, but that they are also able to set up warehouse processes independently in the application to handle changing requirements. There are cases where the new logistics model has created the conditions and opened up the space to develop new business models, such as online trading.

Spotlight on user experience

External solutions, such as EPG | LFS, guide users through workflows using the sequence of user interface screens. This does not just mean lower complexity compared to products that focus on traditional ERPs. It also gives users the tools to configure the system themselves, in particular to set up processes by changing the order of the screens.

EPG uses the "iBrowser". It is currently available in 16 languages and provides an intuitive user interface. In addition to the features, the ability to customize the software and the future viability of the software, companies should always consider providers' project experience, support, expertise and training concepts when choosing a WMS.

In the best case, a system provider should offer you comprehensive, neutral and manufacturer-independent advice. Advice should start in advance at the planning stage and continue over the course of the project, during implementation and for ongoing support.

Further reading:

A lot of useful information about logistics, current and future trends and practical implementation of logistics projects is available on the EPG website on the [logistics knowledge platform](#).

The final question is – what will it cost us? The total figure should include the cost of software licenses and project implementation, as well as the running costs.

Licensing and integration costs

At first glance, SAP has the edge on costs, as it delivers seamless integration. But that's not the whole story. When it comes to licensing costs, the divide is between licensing on a user by user basis (named user license) and a solution-based approach with a central server license (such as EPG | LFS). Named user licenses often come with high costs for future extensions in particular. You should always get advice. Lots of WMS providers negotiate on their licensing models.

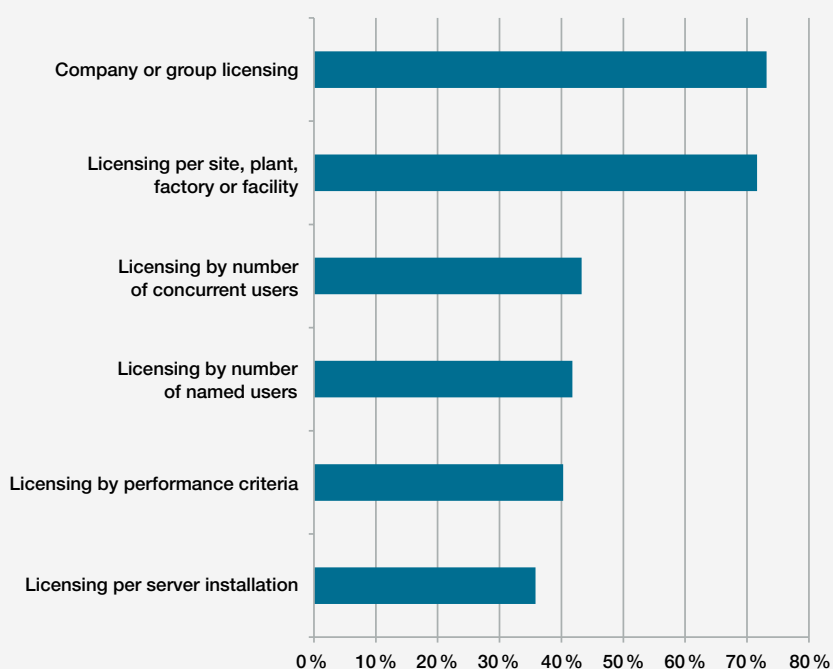
Running costs

Running costs are different in every scenario – whether internal or external. You should always calculate the costs of training, maintenance, a hotline and updates. Do not forget additional costs for obtaining additional licenses and for future customizations and add-ons, such as to connect new sites.

To cost external services (EPG | LFS), quotations are usually obtained that include a cost estimate of internal costs (SAP) for support and customizations. These apply in particular to the warehouse management and material flow system, the interfaces and changes in ERP.

THE STANDARD WMS LICENSING MODELS

Licensing models available from WMS providers



Notes on licensing models

Concurrent users:

This licensing model defines the maximum number of users that can access the WMS at the same time (concurrently).

Named users:

This licensing model defines the number of users that can access the WMS with an account registered in their name.

Performance parameters:

This licensing model provides licenses depending on performance parameters, such as the number of job items.

Source: Fraunhofer ILM/warehouse-logistics.com

73% of WMS providers are willing to negotiate on a company or group license.

In short, never just look at the purchase price. When calculating the total cost of ownership (TCO), do not just take into account the licenses, but other factors such as implementation costs, subsequent service and support and building up your expertise as well. The requirements in the specification for your future warehouse management system, covering features, the degree of networking and other aspects, are an important basis for calculating the TCO.

Did you know?

Many WMS providers are now innovating on costs in a number of ways. For example, the IT infrastructure solution from EPG, EPG | CLOUD, can be scaled to just the size you need. Companies that use the private cloud only pay for what they actually need. Hardware framework agreements are also available with favorable special rates. These options save a significant chunk of the investment budget.

Summary

Logistics is increasingly important to the success of any company. To succeed, it is essential that IT systems support internal processes along the supply chain as effectively as possible. Companies in every sector and of every size therefore need first-class systems that deliver flexible, perfect-fit logistics solutions that meet market and customers requirements – and not just today, but in the future as well.

It is no longer just a question of "as many features as necessary at as low cost as possible". The degree to which a WMS can respond flexibly to current and future challenges is now more important. It is also important that the advice and support from system providers before, during and after implementation is delivered with the right level of expertise and granularity for companies of every size. When choosing the right warehouse management system, the weighting of specific topics against costs is essential – from features, performance and future viability of the system through project consulting to support and training.

For logistics optimization, the average amortization period from a WMS provider such as EPG is around two years. Using a WMS for automated warehouse planning, for example, also saves around 850,000 Euros in operating costs per year.

A program that companies can manage and customize largely on their own is not just cost-effective in the medium and longer term. In the hands of users, it grows into a tool to continuously develop and optimize logistics and warehouse management. A tool that gives users the ability to permanently improve their competitiveness.

An external warehouse management system, such as EPG | LFS – which is used by major logistics service providers including DHL, Fiege and Hellmann on a global scale – will therefore often be the superior solution.

Internal or external warehouse management system? **sion-making. We would be happy to advise you if you**
The following checklist lists the key factors to con- **have any questions.**
sider and important criteria for assessment and deci-

Top 10 key points

1. Prepare a structured selection procedure with a specification.
2. For low complexity, the logistics module from your ERP package may be enough.
3. Greater complexity requires add-on module for logistics or a WMS from a specialist provider.
4. Avoid deciding early so that you can match your requirements profile against the features and performance of the available software.
5. Integrated packages are familiar to use and have reliable interfaces.
6. External products have more features, a process-oriented user interface, and also often have standard interfaces.
7. If an implementation project is necessary, compare the expertise of providers and the cost and effort of implementation.
8. Watch out for the (variety of) industries the WMS is used in – key indicator: Examples of use by logistics service providers.
9. External warehouse management systems are often configurable, which means they are easier to introduce, your company is not dependent on one provider and you get greater flexibility.
10. Determine costs: Software license plus project plus running costs (training, maintenance, hotline, updates, future customizations and add-ons, such as connecting new sites, and any other licensing costs).

Sources:

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CONTACT

DENNIS KUNZ

Marketing Director at Ehrhardt + Partner GmbH & Co. KG

Ehrhardt + Partner GmbH & Co. KG

Alte Römerstraße 3 | 56154 Boppard-Buchholz | Germany

Phone.: (+49) 67 42-87 27 0 | Fax: (+49) 67 42-87 27 50

Email: info@epg.com | www.epg.com



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