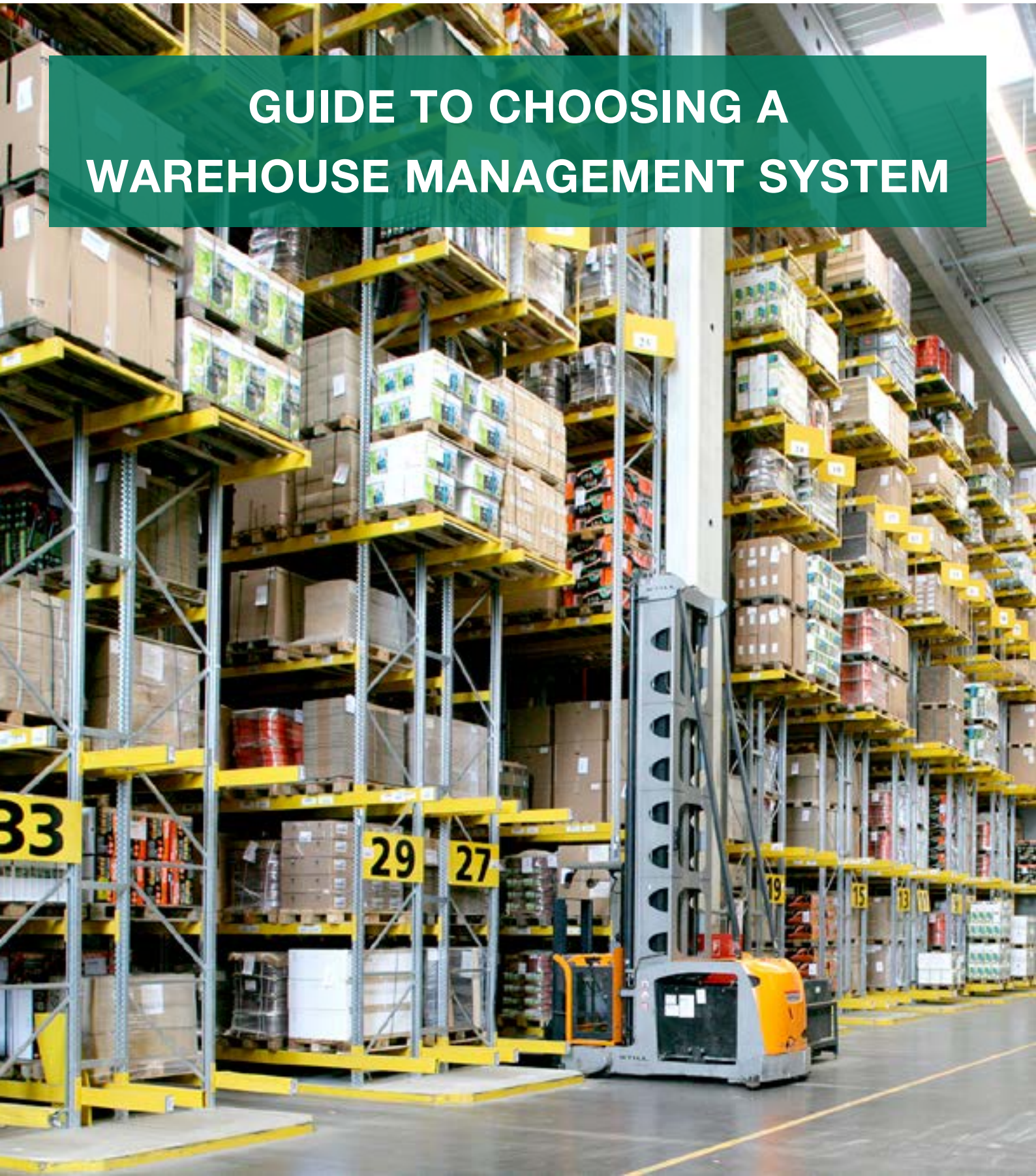
EPG® Ehrhardt Partner Group

Smarter Connected Logistics™

WHITE PAPER

GUIDE TO CHOOSING A WAREHOUSE MANAGEMENT SYSTEM



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Trends such as the Internet of things, cloud computing, mobile platforms and big data are part of a digital transformation that arrived in logistics long ago. Under the banner of Logistics 4.0, all processes along the supply chain are progressively being networked and permanent monitoring put in place – from supplier through logistics service provider to the end customer. Key drivers include the constantly growing volume of global data traffic (which is expected to increase to 44 million Gigabytes by 2020), ever more demanding customer requirements and tough international competition. Constant optimization of corporate logistics processes is therefore essential for the success of business.

The latest research from the Fraunhofer Institute for Material Flow and Logistics (IML) and warehouse logistics shows just how dynamic the market now is and the direction logistics is heading in.

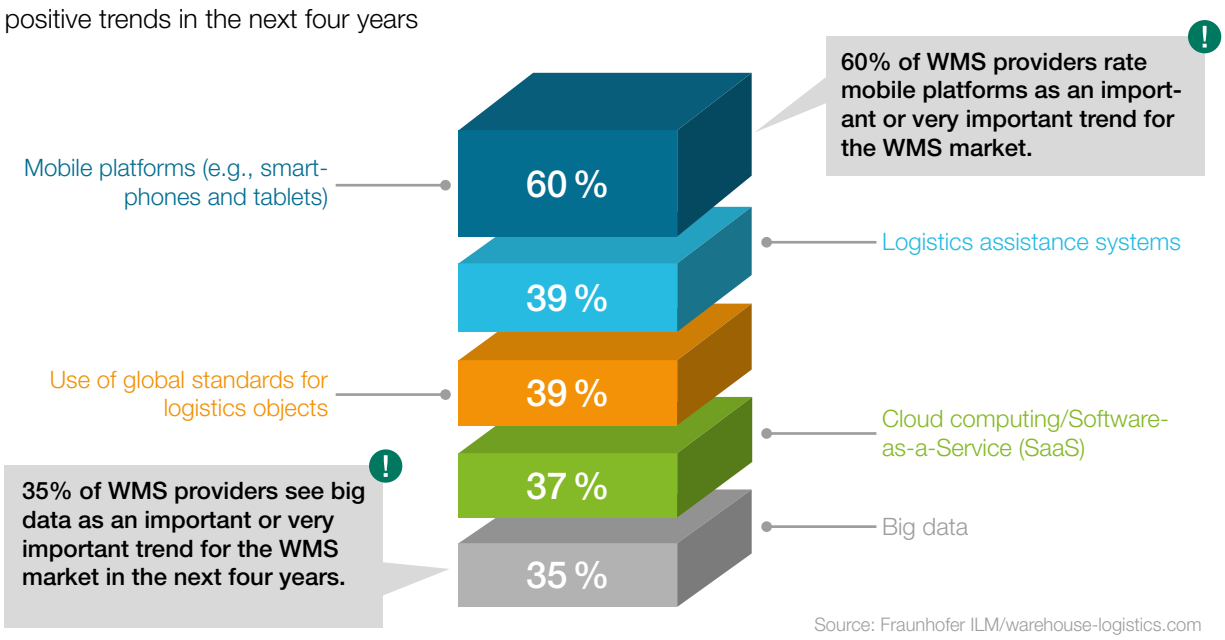
From the perspective of industry, Logistics 4.0 means a huge increase in efficiency (e.g., from transparency, automation, process speed, error reduction and bundling) and of effectiveness (e.g., from flexibility and customized services, processes and products). According to a survey by the Hermes parcel delivery service, one in every four companies is already benefiting from Logistics 4.0. The majority of those companies have either already introduced some application or are at the implementation or planning stage. Speed, precision, flexibility and networking are becoming essential competitive factors, because customers want access to goods right now, everywhere and at all times, and want to see the availability of goods too.

Significantly more is now expected of a modern warehouse management system (WMS) than just a system to manage and organize the warehouse. A WMS has to optimize warehouse processes, reduce costs, and make workflows transparent.

THE WMS MARKET

POSITIVE TRENDS

Top 5 positive trends in the next four years



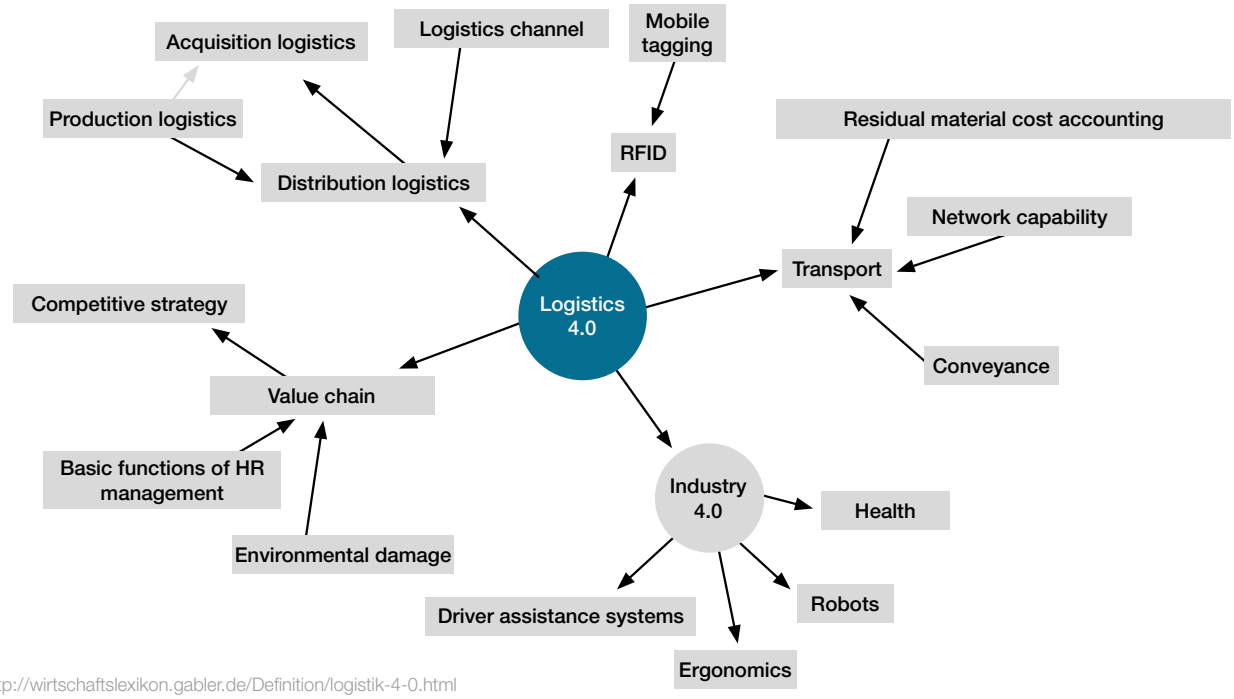
Source: Fraunhofer ILM/warehouse-logistics.com

International business in particular need a warehouse management system that can control all logistics process across borders and in multiple languages in a single version – from warehouse management through material flow control to resource management – and with each individual site or subsidiary having very different requirements. The flexibility, scalability and degree of integration of any software solution are just as important, when it comes to connecting complex warehouse technologies, such as batch tracking, automated warehouses, materials handling technology, and pick-by-voice systems, to give some examples.

But often the warehouse management systems put in place only a few years ago no longer meet current requirements, as the software does not have the features or configuration options that are needed. Experience shows that warehouse management issues and concerns frequently do not get the attention they deserve. 42 percent of large business with more than 250 employees, for example, report that they are still 'blind' at many points on the supply chain, as they are not collecting any data at all.

They could definitely achieve better results with system-driven picking methods. In the spare parts business and online retail in particular, significant increases in efficiency can be achieved using modern, paperless technologies, such as RF data transmission and pick-by-voice. In short, companies must focus on meeting the ever more demanding requirements of today and of the future most effectively – with the help of efficient and competitive IT support.

The following guide helps companies find the right WMS provider – whether to introduce a new warehouse management system or to replace an existing system.



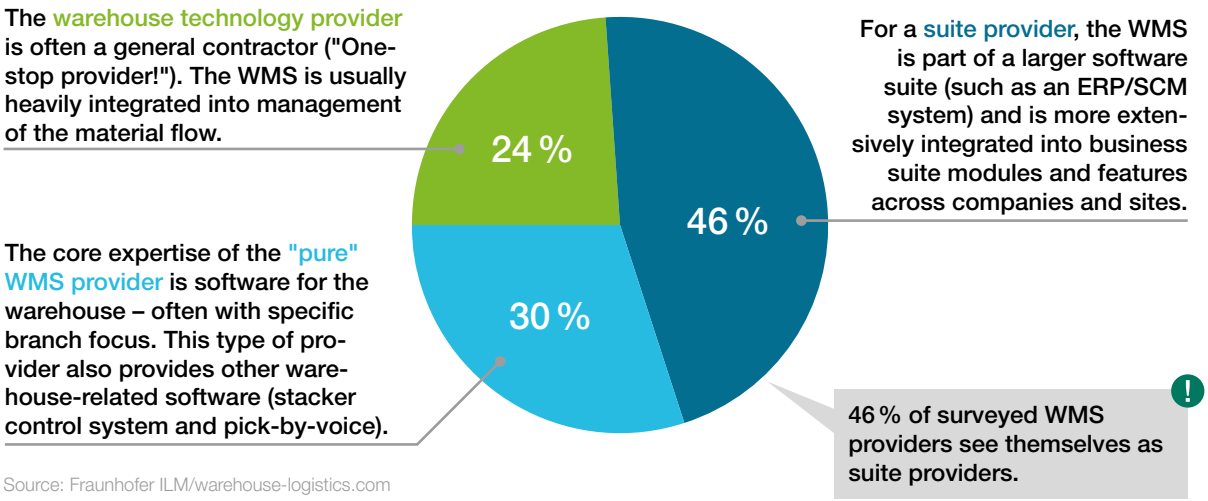
Source: http://wirtschaftslexikon.gabler.de/Definition/logistik-4-0.html

Such a large and complex project as choosing and introducing a (new) warehouse management system requires robust preparation and end-to-end planning. Especially as you are entering into a partnership with your future WMS service provider that will, on average, last at least ten years. We help you find the right WMS provider and identify the criteria that will lead you to the right choice.

areas where issues arise as a result (e.g., high picking error rate, high rate of returns, slow warehouse lead time, and inefficient networking or material flow). Identify the requirements for the new system. What are the opportunities for your company in terms of your current – and your future – competitive position?

THE WMS MARKET

TYPES OF PROVIDER



Source: Fraunhofer ILM/warehouse-logistics.com

To meet the growing requirements of logistics, you have to look beyond the familiar logistics landscape. Follow trends in logistics regularly and keep up-to-date with newly launched software and the latest technologies used by companies in the industry. It is also worth visiting relevant trade fairs and logistics events to find out about new developments too.

To choose the right warehouse management system, it is essential to star by preparing a specific description of your existing logistics environment and analyzing the logistics processes very carefully. Assess the weaknesses of your logistics and the

What impact do digital transformation and Logistics 4.0 have on your business processes and what do you want your company to look like in five or ten years? Long-term goals should inform your decision as well. It is also useful to visit friendly companies that have already completed warehouse upgrades to get something to compare against and an idea of best practices.

The overview below breaks down the crucial factors for success when choosing a (new) warehouse management system.

Successful teams deliver successful projects! This also applies when choosing and introducing a (new) warehouse management system. Putting together the right project team is therefore key to a successful project.

For most companies, introducing a warehouse management system is a huge challenge. Such a complex and extensive IT and logistics project that is designed to make the company's processes more efficient and secure its long-term viability not only requires end-to-end planning and controlling, but special skills, experience and methods expertise as well.

With the full support of management, you should therefore put together a motivated, expert team with the qualifications necessary for all aspects of the project. Include employees from all the relevant departments in your project team, e.g., from warehouse and shipping logistics, IT and production. This will keep everyone involved in the process and make sure everyone is kept up to speed.

Factors for success when choosing a WMS:

+ Put together a project team

+ Analyze and assess the logistics environment

+ Create a specification

+ Create a portfolio of features for the WMS solution

+ Quality assurance

+ Project plan and schedule

"Connecting IT and logistics has huge potential for Germany as a place of business. Companies that have their eye off the ball will be out of the race in the medium term."

Dennis Kunz,

Marketing Director at Ehrhardt Partner Group

The more you know about the strengths and weaknesses of your existing logistics landscape, the better you will be prepared for the process of choosing a suitable WMS. Discuss the features and customizations you need for your logistics environment with your project team and set priorities for the areas you need to focus on in particular.

Points to be clarified may include:

- Analysis of the value-added process in the warehouse and assessment of inefficient processes and their impact on costs
- What areas and processes can be made more efficient by modernizing the warehouse (e.g., picking, material flow control and transport management)?
- How good is the workflow and smart networking between sections (e.g., goods incoming and shipping)?
- What expectations do you and your project team have for the new warehouse management software (e.g., cloud connection, connection of handling technology)?

The table below lists possible performance and cost indicators for analysis from goods incoming through picking and provision to goods outgoing.

Key figures can provide insight into economic performance to give you an overview of the current situation in the warehouse. This will show you what you can achieve with a warehouse management system.

Possible performance and cost indicators for analysis

	Goods incoming	Picking	Goods outgoing
Performance indicators	• Number of pallets/h • Number of putaway movements/h • Stacker performance/h • Number of stacker trips when empty/h • Error rate (jobs/h)	• Number of picks/h • Stacker performance/h • Number of stacker trips when empty/h • Transaction data (stock transfers/h, throughput) • Warehouse utilization rate (%)	• Number of retrieval movements/h • Number of shipments/h • Number of tours • Delivery reliability (%)
Cost indicators	• Cost/putaway • Costs for resources (warehouse personnel, warehouse technology and equipment)	• Cost/stock transfer • Cost/pick • Costs for resources (warehouse personnel, warehouse technology and equipment)	• Cost/job • Costs of complaints • Costs of errors • Costs for resources (warehouse personnel, warehouse technology and equipment)

The specification is the basis for choosing a warehouse management system. It describes all the requirements for the planned software, hardware and associated services from a service provider, as well as any additional contractual terms. It is also the basis for obtaining quotations.

Core elements of the specification:

- Specification of the functional scope of the WMS (e.g., processes and functionalities)
- Specification of the logistics technology to be used (e.g., pick-by-voice, pick-by-light, RFID, and equipment)
- IT hardware and software architecture (e.g., definition of the server platform and database)
- Specification of services to be provided (e.g., training sessions, other training, support)
- Cost structure (e.g., ROI calculation, deliverables, and service contract)
- Project management requirements (e.g., project documentation)

Take plenty of time to work out your specifications and consider all the requirements you have for your WMS provider.

"Integrating and networking all logistics departments is both a challenge and an opportunity for companies. Only companies that use specialists to bring in the necessary technical expertise and knowledge of the requirements will survive in the tough competitive environment."

Dennis Kunz,
Marketing Director at Ehrhardt Partner Group

Analyze the potential problems that may arise in the project. Document upgrade options for the software, because upgrades usually mean additional expense and costs.

The purpose of the specification is to give you as the client and your future contractor a 360-degree, shared understanding of the scope of performance and the required services for the new warehouse solution.

In total, there are around 170 providers of warehouse management systems in Germany, Austria and Switzerland alone, including "pure" WMS providers, warehouse technology providers and suite providers, who offer their system as part of a complete software suite (e.g., ERP system). Most providers have many years of experience in the WMS field. Use the following criteria to find your perfect candidates.

Many years of industry experience

In general, experience is a must for a customized solution. You can identify professional providers of leading warehouse management systems from the fact that they have a cross-industry software portfolio and technical expertise in the specific industries. Specialized project teams deliver professional project management and keep within deadlines and budgets. Qualified providers also work with leading logistics partners (e.g., hardware providers for portable scanners). This gives you certainty that complex projects with challenging requirements can be implemented within a very short time.

High-profile references

A long list of references in logistics is almost as important. If you find a lot of high-profile logistics customers providing references for a WMS provider, you have further evidence that the provider can handle a range of very different customer requirements. Contact several users of a particular warehouse management system to get useful insight from their practical experience with the system.

Comprehensive portfolio of services

Another clear indication of expertise is whether a WMS provider is a one-stop shop for many different services. There is a clear trend towards general or suite providers. The WMS providers are responding by adding sub-systems and warehouse technology and equipment to their portfolio of services. Demand for providers who can take on all the warehouse planning and consulting for the introduction of a WMS is also growing. This is clearly an advantage for warehouse operators, who want to implement their new projects with as few different parties as possible.

Training concept

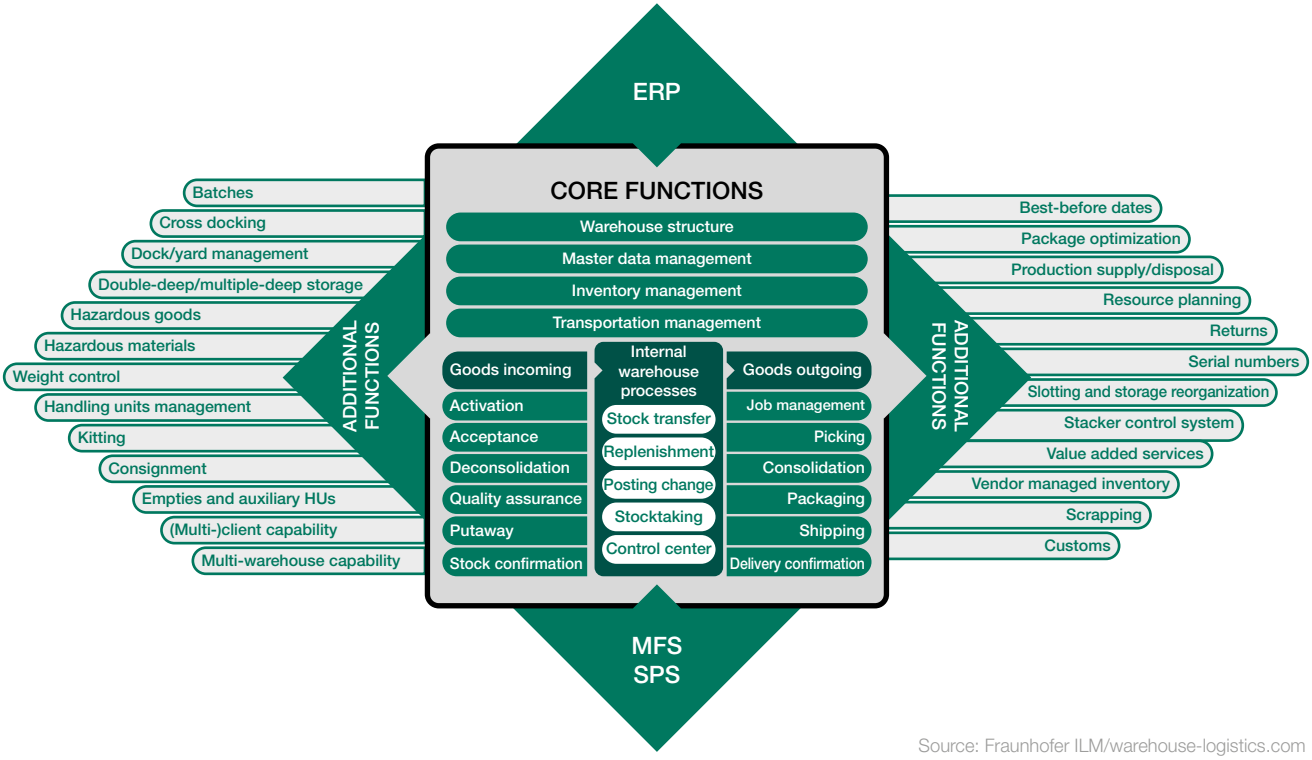
When choosing, check whether the provider's portfolio includes training sessions, general training and workshops by qualified instructors to provide your warehouse staff with the qualifications they need for new challenges and tasks. Many providers deliver special train-the-trainer courses to train company managers to train their staff. This typically means training a key user, who can then pass on what he/she has learned to other employees. One of the main reasons to involve managers in the process of knowledge transfer and implementation is to increase acceptance of a new WMS solution among the workforce and manage concerns, such as worries about the collection of personal data.

What features does the future WMS solution need to have for your company – are standard features enough for your warehouse structure and to management your master data, inventory and transport? Or do you (also) need other features, such as handling of hazardous goods or a control center for mobile devices? Find out here about the criteria you should consider when choosing your future WMS system. The graphic below gives you an overview of the features of a WMS (core and additional features).

Features

The list of features offered by warehouse management systems has been growing steadily in recent years. Companies require more and more features to take full advantage of the potential for cost-savings within the warehouse and to be able to respond to future requirements placed on the warehouse environment. This is why efficient warehouse management systems go well beyond ordinary warehouse management features and deliver active management of the warehouse – which is also connected to human resource planning and to smart, real-time warehouse technology control systems. In addition to the software, you need to think about any necessary hardware, such as a radio data transmission system, portable data capture (PDC) terminals and printers, has to be considered - including integration of the radio data transmission system and radio transmission in the warehouse.

FEATURES OF A WMS (CORE AND ADDITIONAL FEATURES)



Source: Fraunhofer ILM/warehouse-logistics.com

Flexibility and scalability

Users need to be able to expand the software with little effort and customize it in accordance with their specific needs. As systems with modular designs are highly customizable, they have the upper hand and can easily be adapted to future, customer-specific process workflows. This aspect plays a major role, as a high level of adaptability is pivotal to the future success of a company.

Integration

Technological dependency comes at a price. The more self-contained software is in terms of database and server architecture, the more flexible you get to be. Systems that were built on a “single code base” offer a particularly high level of flexibility, using uniform, standardized software code, which can then be used and applied within the company regardless of operating system. Using the warehouse management system’s open interface architecture, even solutions offered by third-party providers can easily be embedded into the system environment. Certified interfaces are highly configurable in terms of the data that is used. An open system can be seamlessly integrated into all common and existing IT structures without having to change a customer’s tried-and-tested hardware and software architecture.

Usability

Software must be intuitive to use. Unfortunately, warehouse management systems are frequently not very user-friendly. Lots of users spend a substantial part of their working day “flicking” between the various screens of their software system. The efficiency of their work largely depends on how user-friendly the software is. We therefore recommend carrying out intensive user testing before introducing the new software. This can identify sources of error, for example, and find out how much time you need for a specific working process and how many steps it takes you to get there.

Internationalization

For companies operating internationally, it is essential to coordinate WMS projects on a transnational level. In the best case, a centralized software installation for the different countries and warehouses can handle a multinational’s entire inventory management and flow of goods. You should also keep in mind the languages you will need for the software system down the line. This will save on costly investment in IT staff and high-value hardware across multiple sites. For companies operating internationally, it is very important for a WMS provider to offer support in several languages.

"Changing customer needs, ever increasing industry requirements, and globally connected markets – the pressure to continuously optimize logistics processes is relentless. A modern warehouse management system therefore has to be capable of implementation across industries and languages, it must be flexible, offer maximum performance, and be intuitive to use."

Dennis Kunz,
Marketing Director at Ehrhardt Partner Group

Once you have assessed the information available from several WMS providers, it is worth selecting two to three potential providers and looking at them more carefully. A live demo is a first step, followed by visits in person to customers of theirs that have provided references.

A live demo is designed to simulate and review specific issues in the warehouse. You can then project the results onto your own warehouse. Visualization with virtual reality hardware, for example, will give you comprehensive insight into the conceptual design and allow you to adapt your internal planning processes quickly.

The next step involves asking specific providers to arrange visits to their customers. Choose the companies you visit carefully and make sure that they are comparable to your company in terms of size, field of business and logistics environment. Prepare a questionnaire for visits to providers' customers so you can assess the advantages and disadvantages of the software from the perspective of each customer. The questionnaire should cover the features of the warehouse management software, as well as the services provided by the supplier before and after implementation. The questions may cover general points, such as introduction of the project (e.g., duration and number of project members), as well as the provider itself (e.g., satisfaction, support, expertise, and professionalism) and the specific software (e.g., handling , functions, strengths and weaknesses).

You're almost there! Before finally choosing a provider, you should get the key details of the project for the introduction of the software down in black and white. Ask your future provider for a detailed overview of the project (draft schedule, milestones and important key dates). You can then track the crucial steps of the project at all times and keep everyone up-to-date with progress.

Key project details

- Project manager
  (e.g., CV, aim of project, rough schedule, employees, project team and scope of responsibility)
- Schedule/milestones
  Identify and communicate project steps
- Specification phase
  Refine concept, feature documentation, data structures, specify test environment, define interfaces
- Training phase
  Create team, train relevant employees, train-the-trainer concept
- Implementation phase
  Organization and planning
- Support phase
  On-call services, on-site service, repair center

The checklist below gives you an overview of possible points you can assess to consider the strengths and weaknesses of specific providers and their warehouse management systems. You can add specific weightings to your assessment before you choose the right warehouse management system from a suitable provider.

Good luck!

Assessment matrix		Provider 1		Provider 2		Provider 3	
Criteria	Weighting Less important (1) to very important (5)	Points (1-10)	Points, weighted	Points (1-10)	Points, weighted	Points (1-10)	Points, weighted
Industry experience (how long on the market?)							
Number of references							
Size of portfolio of services							
Support/helpdesk							
Release management							
Training concept							
Provider quality, overall							
Features							
Flexibility and extensibility							
Integration							
Usability							
Internationalization							
Quality of WMS, overall							
Result							

Company profile

EPG – Smarter Connected Logistics

EPG is one of the leading international providers of comprehensive Supply Chain Execution Systems (SES) and employs 700 people at 19 locations worldwide. The company supplies its more than 1,500 customers with WMS, WCS, WFM, TMS and voice solutions to optimise logistics processes – from manual to fully automated logistics environments. EPG solutions cover the entire supply chain, from warehouse and road to ground and cargo handling solutions at airports. EPG's comprehensive portfolio of solutions is complemented by logistics consulting, cloud services and managed services, as well as logistics training courses at the company's own academy.

EPG IN NUMBERS

★★★★★ **MORE THAN 1,500 CUSTOMERS** ON ALL CONTINENTS WORLDWIDE

700 EMPLOYEES AT **19 LOCATIONS** WORLDWIDE

OUR SOLUTIONS ARE AVAILABLE IN **50+ LANGUAGES**

LYDIA® VOICE

FASTEST GROWING AND SECOND LARGEST VOICE SOLUTION IN THE WORLD

30+ YEARS LOGISTICS EXPERIENCE

SUPPLY CHAIN EXECUTION SUITE
INTERNATIONAL LEADING LOGISTICS SOLUTION

TOP 5 WAREHOUSE MANAGEMENT SYSTEMS **WORLDWIDE**

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