Warehouse Management Systems

WMS Market Overview 2009

A report on the current
events on the WMS market

THE SUPPLY
CHAIN GROUP
www.the-scg.com

WMS Market Overview 2009

List of Abbreviations

IT	-	Information Technology
PLC	-	Programmable logic control
RFID	-	Radio-frequency Identification
WMS	-	Warehouse management system
WOLF	-	Warehouse Management Systems Online Finder

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Aberle Automation GmbH & Co. KG	PMS-L	
Aldata Retail Solutions GmbH	G.O.L.D. Stock	
CIM GmbH Logistik-Systeme	PROLAG® World	
Coglas GmbH	Coglas	
Dr. Thomas + Partner GmbH & Co. KG	TWS	
GIGATON GmbH EDV- und Netzwerkberatung	LogoS C/S	
inconso AG	inconsoWMS	
InnoLOG GmbH	MoTIS® LSV	
ISA - Innovative System Solution for Automation	ISASTORE	
LinogistiX GmbH	myWMS LOS	
prismat GmbH	SAP EWM	
S&P Computersysteme GmbH	SuPCIS-L	
Salomon Automation GmbH	WAMAS	
SALT Solutions GmbH	SAP EWM / LES TRM	
STILL GmbH	MMS.i	
TEAM Partner für Technologie und angewandte Methoden der Informationsverarbeitung GmbH	ProStore®	
TGW Systems Integration GmbH	CI_WMS	
Vanderlande Industries Logistics Software GmbH	VISION ™	
XELOG AG	XELOG LagerSuite	

Table 1: List of participants in the study

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Market Overview

Logistical processing is an essential competitive edge against other suppliers on markets which are steadily becoming more homogeneous. Regardless of whether the order is placed with regional suppliers or on the global market – the requirements stay the same:

“A fast, perfect, on-time delivery.”

Efficiency in handling of complex processes can only be achieved by support of a sound IT system - a warehouse management system.

The development of warehouse management systems has achieved a relatively high maturity. Back in the early days, individual systems were programmed, today the market offers modular standard systems. These systems can be customized appropriately to the customers’ needs and can be expanded if necessary.

Despite the modular structure of the systems, their adaptability and a high coverage of the functions, differences exist between the single systems:
Software vendors partly focus on specific industries or on specific functional areas so that individual functionalities are developed differently by the vendors.

WOLF: The WMS Online Finder

Use the WMS search tool for free online

In co-operation with the SCG (SCG – The Supply Chain Group AG), the IWL AG conducts an analysis of the WMS market regularly. In this report, we would like to present a summary of the analysis results for German-speaking Europe. Our free online search tool WOLF (WMS Online Finder) helps you quickly carry out a pre-selection of warehouse management systems that best matches your demands. Detailed information on all participating WMS suppliers can be found online at:

www.wmsfinder.com
www.iwl.de
www.the-scg.com

In the SCG WMS Finder, vendors are listed who rated their market position and target group in a questionnaire as a part of our study.

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Vendor	Product	Total clients	Installations	New clients WMS 2008	New installations 2008
inconso AG	inconsoWMS	280	310	30	30
GIGATON GmbH EDV- und Netzwerkberatung	LogoS C/S	250	350	20	25
prismat GmbH	SAP EWM	80	100	20	20
Coglas GmbH	Coglas	93	130	10	15
InnoLOG GmbH	MoTIS® LSV	80	150	10	12
Aberle Automation GmbH & Co. KG	PMS-L	100	100	10	10
Dr. Thomas + Partner GmbH & Co. KG	TWS	39	62	9	14
TGW Systems Integration GmbH	CI_WMS	270	290	9	9
ISA - Innovative System Solution for Automation	ISASTORE	150	325	8	32
Salomon Automation GmbH	WAMAS	202	411	8	18
SALT Solutions GmbH	SAP EWM / LES TRM	49	78	8	14
CIM GmbH Logistik-Systeme	PROLAG® World	79	n/a.	8	n/a.
S&P Computersysteme GmbH	SuPCIS-L	81	110	7	12
XELOG AG	XELOG LagerSuite	78	128	6	15
STILL GmbH	MMS.i	105	115	6	8
TEAM Partner für Technologie und angewandte Methoden der Informationsverarbeitung GmbH	ProStore®	80	85	5	6
LinogistiX GmbH	myWMS LOS	5	5	5	5
Aldata Retail Solutions GmbH	G.O.L.D. Stock	80	150	4	7
Vanderlande Industries Logistics Software GmbH	VISION ™	55	63	n/a.	n/a.

Table 2: WMS vendors according to number of new clients

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Developments on the WMS Market

In the study for the WMS market conducted by the U.S. American ARC Advisory Group in 2008, an average annual growth of 7.6% until 2012 was still forecasted. But the results of the current study from spring 2009 turned out very different:
The figures for 2008 have been corrected and a decline of 2.4% has been detected. A further decline of 3.6% will have to be faced in 2009. A reversal of the current trend will be expected no earlier than 2010 when a slight increase of a 2.2% average annual growth is forecasted.
On the European market, the amount of new clients appeared to grow steadily. But by 2009 at the latest, remarkable increases in sales can only be achieved by market consolidations.

How can this change be explained?

The current economical situation is an essential, obvious fact, which is mirrored in the WMS market.

Many WMS vendors have lived on existing projects in the first months of the crisis. Despite the still existing need of improvement of many systems, companies have held back IT investments or even frozen projects which have already been started.

The amount of new installations is also declining. The main reason is the much slower growth of companies to a size and thereby a level of logistical complexity which would require the application of a WMS.

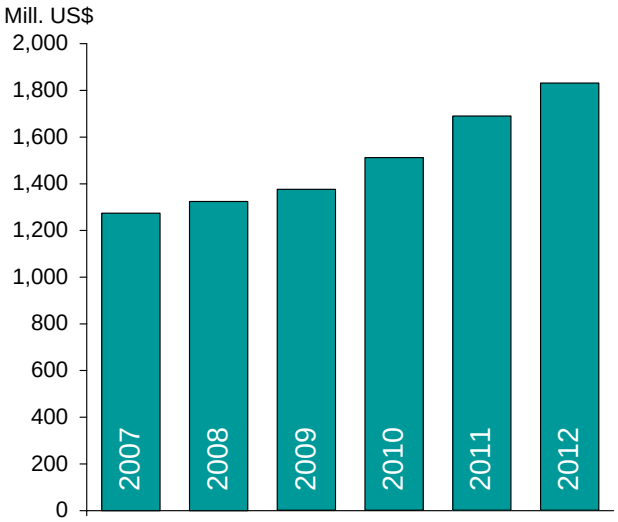

Figure 1: 2008 forecast for the WMS market
Source: ARC Advisory Group

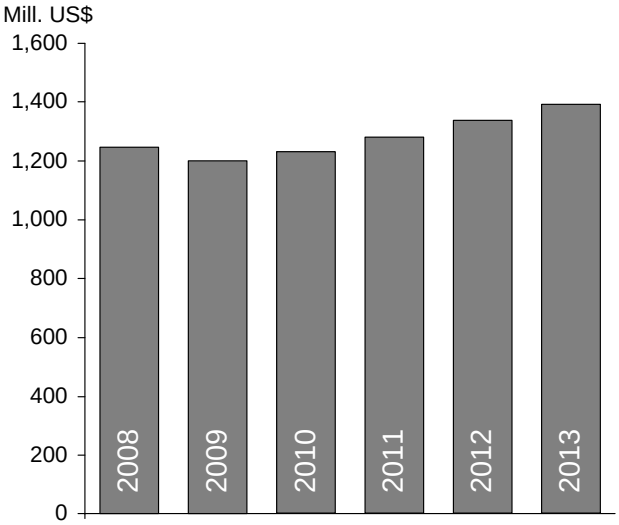

Figure 2: 2009 forecast for the WMS market
Source: ARC Advisory Group

Success Factors

	Success Factors	Focus		Interest	
		2008	2009	2008	2009
1.	Special functionalities	22%	28%	85%	94%
2.	Quick and simple implementation	17%	15%	70%	67%
3.	Integration, modular structure	13%	15%	60%	61%
4.	Partnership	11%	12%	50%	50%
5.	Latest technology	11%	12%	50%	50%
6.	Continuity of vendor and system	18%	10%	70%	44%
7.	Best price	9%	8%	40%	33%

Table 3: Sales arguments of the WMS vendors (multiple entries possible)

Each vendor and each warehouse management system has its own strengths. Based on this background, the sales arguments of the vendors differ. The arguments in Table 3 were provided as options; the vendors were asked to concentrate on a maximum of four arguments.
The range between the weighted arguments is not very high. But a look at the vendors' interest in the particular arguments reveals considerable differences.

The orientation of the software to specific functionalities (e.g. industry specifics, connection to other systems) takes the focus of attention. This is hardly surprising: unique selling propositions of the software go along with distinguishing themselves from the competition.

A significant change can be seen under "Continuity of vendor and system". This argument has considerably less importance attached to it than the preceding year. Also, the argument "Best price" is losing more interest: only one-third of the vendors are merely interested in winning a contract based on price (already before the bidding process has started).

Figure 3 shows the target price segments of the WMS vendors.

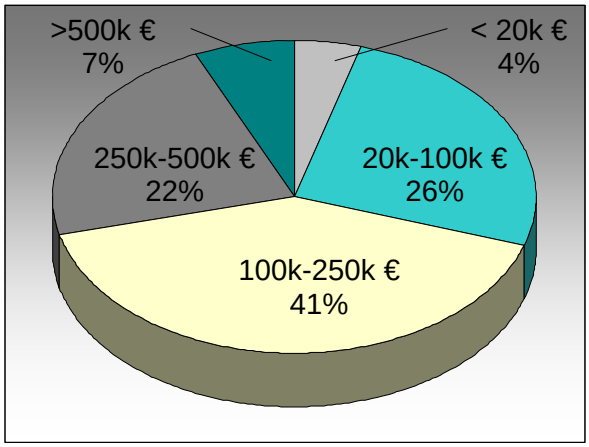

Figure 3: Target price segments of WMS vendors

Current Scope of Supply

	Scope of Supply	2008	2009	Interest 2009
1.	WMS	61%	63%	100%
2.	Picking subsystems	19%	16%	67%
3.	Storage technology	7%	13%	50%
4.	Cooperation with subcontractors	13%	8%	39%

Table 4: Scope of supply of the WMS vendors

A common trend in the building industry for years has found its way into logistics - general contractors (also see Table 4). This development is driven by the wishes of clients to have less contact persons and to hand over responsibility regarding coordination with different vendors.

Besides warehouse management systems, the WMS vendors are especially interested in offering picking subsystems and storage technology as well as going into cooperation with subcontractors.

It is not surprising that the offer of storage technology squeezes the cooperation with subcontractors out of the third place. Everybody who has observed the market over the past years can recognize that more and more vendors of storage technology have merged with WMS vendors or have integrated them into their concern.
This new structure enables a system-based high integration, especially on all communication paths between the warehouse management system and material-handling engineering components.

But a too close cooperation also carries the risk of disadvantages: Especially the flexibility to other technical system solutions is severely limited.

Although there is the possibility to get storage technology and the warehouse management system from a single source, potential buyers should consider the following aspects:

- How much is the functional coverage of the WMS?
- How much effort for system adaptations is necessary?
- Can all critical processes and those which affect competitiveness be covered?

If the coverage is significantly lower than the coverage of other vendors' systems, the advantage of reducing contact persons should be carefully weighed out in comparison to a "suitable" system.

Development Trends

Future priorities	Previous priorities	Trend	Development Trends
1	5	++	Trend to supply chain management systems
2	1	-	Optimisation of the WMS core
3	7	++	Connection with production supply
4	3	-	Management information
5	2	--	RFID
-	4	--	Interfaces to subsystems
-	6	--	Visualisation

In an open question of the study, the WMS vendors were asked to name the developments they have implemented in the last two years and which they are planning to implement in the next two years. All significant developments are presented in Table 5, ordered by priorities.

The WMS core embodies the heart of the software. The better the core is developed, the better the system runs. To meet the customer requirements in the best possible way, the optimisation of topics like system structure, interfaces, web interfaces, user interfaces and control elements are set high on priority lists.

As explained under the topic “Success Factors”, special functionalities represent a significant argument for the success of the WMS vendors. Looking at the development trends, the results show that the scope of functionalities and the field of applications enlarge remarkably: the development of a supply chain management system and the connection with production supply are the most important innovations.

Many WMS vendors use the time of “free capacity” to orientate themselves towards logistical trends which promise a future market benefit. This is mirrored in the development trends.

As a result, the topics described below are to be indicated primarily.

Green Logistics

Logistics which primarily comprises transport, storage, management and handling of goods has to supply the customer with goods to satisfy his/her needs – at minimum cost.

Apart from costs, there are also other important factors which nowadays are to be considered and influence logistics: air pollution, climate change, noise and accidents pollute the environment and upset its balance.

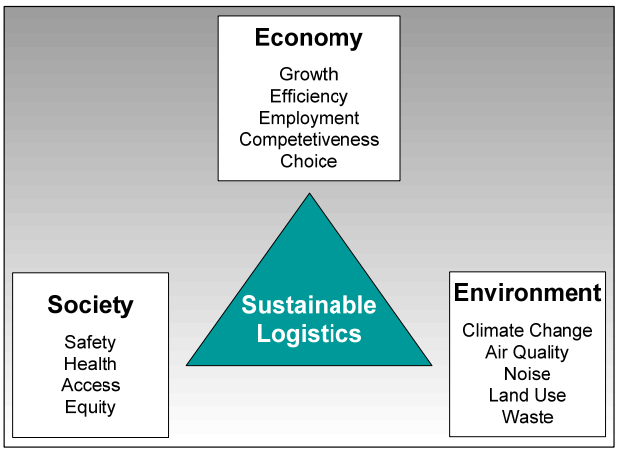

Figure 4: Contact points of sustainable logistics
Source: www.greenlogistics.org

New regulations by the government such as limiting CO_2 emissions, issuing CO_2 emission certificates and implementing taxes on fuels and energy along with a change in consumer demand for "ecological" products have led to a change in thinking.

"Green Logistics" stands for sustainable logistics. This means that logistics should be conducted by considering ecological, economical and social factors while the environment survives in its characteristics. Figure 4 shows the relationship between the three aspects to be harmonised.

Energy costs and CO_2 emission will emerge as a new parameter in logistics.

Ecology-oriented goals and their implementation will increasingly prove to be a competitive advantage for companies which react to changes in consumer demands.

Accordingly, this will also lead to a rise in demand for suppliers that are geared towards ecological ideas and offer special solutions as well as facilitate opportunities for market shares.

A consequent implementation of "Green Logistics" affects the whole company:

- Location and building structure
- Production
- Transport
- Technological equipment
- IT

An ecological approach is quite apparent in some fields:

- The right planning and structure of a logistics network leads to shorter transport routes and thereby reduced CO_2 emissions.
- An optimisation of inventory while considering availability and delivery frequency affects inventory as well as transport costs.

- Observing an optimisation of production, for example a well-balanced utilisation of production equipment, leads to a more efficient usage of resources.

IT systems and "Green Logistics"

The topic "Green Logistics" is much less apparent in the field of systems. But how can a warehouse management system support an efficient usage of resources?

Efficient processes are of course the basis for an efficient use of energy and costs. Warehouse management systems play a supporting role in the implementation of defined processes and can thereby support a resource-conscious use.
Storage strategies are essential for optimised retrievals. The right strategy decides the amount of route times and, thereby, transport duration. Each transport process requires resources.

The right warehouse strategy leads to **route-optimised storage and retrieval** or route-optimised order-picking. An important aspect concerning realisation in the system is that the system should not only know the shelf numbers but also the warehouse layout. For example, the storage locations on the opposite side of the shelf can be correctly identified when order-picking.

Double cycles (combined storage and retrieval) should be self-evident nowadays: empty runs are idle performances, be it in the case of automatic systems, forklifts or picking sequences. They cause unnecessary effort and unnecessarily consume energy. An important task of the warehouse management system is to distribute resources and orders in such a way that empty runs are, optimally, reduced to zero. Automatic systems should be particularly planned in such a way that as many double cycles as possible are run.

Load-based travel speed

The level of utilisation (low, medium, high) can be determined based on the storage and retrieval orders. If the utilisation level is determined by the warehouse management system and communicated to the PLC, the stacker cranes can be correspondingly controlled. Based on the utilisation level, they can be driven with low, medium or high speed.

Apart from the speed, the acceleration values influence energy consumption the most.
If the PLC has information on the workload and on the capacity demand, it can markedly reduce the peak loads even here.

Strategies can be developed even in the **preparation of customer orders to shipments**, which have a positive effect on the ecological balance:

1. A reduction of the number of shipments leads to a reduction of the number of transports. The process thus should consider as early as possible how far orders having the same destination address, same target shipment day and same shipment method can be consolidated.

2. An efficient loading-unit determination can optimise the composition of loading

units so that the volume and number can be reduced. This optimisation leads to lower loading volume on a truck. A more compact loading means that the loading capacity can be utilised better: thereby, there is less transport.

3. Transport planning can be efficiently supported by transport management modules: trips can be combined to make tours, the loading capacity can be optimally used and single trips thereby avoided. Further positive effects can be achieved this way, leading to sustainable logistics.

Long-term general approach:

- Speed vs. environment-friendly optimisation?
- Effects on profitability

Further strategic approaches are:

- Capacity management – well-balanced distribution of utilisation
- Integration of transport-volume optimisation modules
- Integration of connections to web-based freight-volume optimisation tools
- Dynamic transport management systems
- Transport control systems

These are points that increasingly lead warehouse management systems to a continuous supply-chain management system and simultaneously support the approaches of “Green Logistics”.

Further developments and ideas will (have to) find their way in this area in the next few years.
The need to consider and to evaluate all these actions under the aspect of profitability of course remains unchanged.

Connection with production supply

The connection with production supply in the WMS features a further step towards an integrated supply chain.

The development and optimisation of modules for production supply is particularly important in times of economic stagnation since they prepare the way towards market recovery and increase of production capacities.

For most companies, production supply must henceforth be flexible, fast and take place in constantly decreasing supply quantities – “synchronised supply”.

This need-based supply of in-house and/or external production volume is a result of:

- Avoiding waste of production space through material allocation
- Avoiding inventory and thereby tying less capital
- Demanding smaller production batches due to client demands
- Individual products (contract manufacturing)

Milk Run

The Milk Run concept is characterised by the following aspects:

- Introducing routes to supply several production stations or cells within one transport.
- Carrying out these transports manually with a correspondingly flexible handling.
- Fixed departure times for the routes and a synchronised supply of the material to be handed over.
- The routes:
  - have one loading point and n unloading points,
  - n loading points and one unloading point or
  - can also comprise n loading and n unloading points (route-based receiving and delivery of load units) in extension of the “classically” definition.
- Collecting and distributing empties or material to be stored on the tour from production stations.

Figure 5 shows how transports to individual production lines can be optimised through the milk run.

The clustered routes lead to more frequent trips to the production lines. A higher delivery frequency has a positive effect of a marked reduction of inventory volume at the production stations. The number of transports can consequently be reduced and the utilisation of transport equipment optimised. This leads to a reduction of inventory and transport costs.

An important goal of WMS vendors has to be the reproduction of this functionality in their software packages.
Implementing a milk-run system requires an exact coordination and synchronisation of processes on both the organisation as well as the system level.

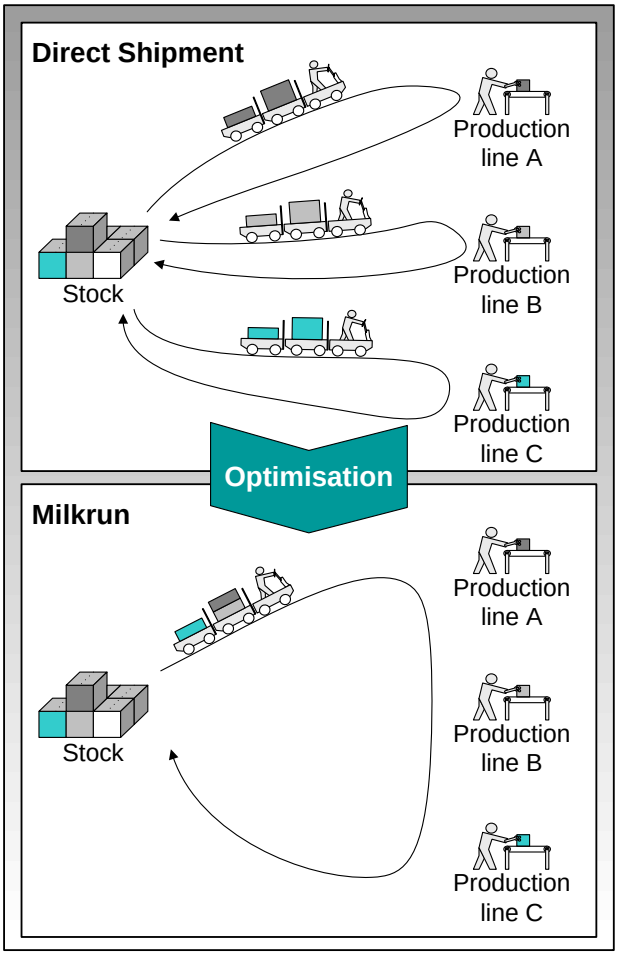

Figure 5: Production supply with Milk Run

On the one hand, the quantity and time demands of the production areas have to be controlled. On the other hand, a coordination of on-schedule retrievals, order-picking based on demand, and supply of material to be collected is essential.

Furthermore, the transport control has to facilitate a secure, error-free pick-up and supply of unit loads, while simultaneously ensuring the basis for a tracking of inventory and orders.

These principal demands can be realised through warehouse management systems.

As an example, the following further starting points to be considered are listed:

Demand requirements:

- Integration of production demands in the interfaces and their interpretation for provision
- Installation of control elements such as fixed batch sizes or Kanban to reduce complexity
- Demand for additional material

Retrieval/ Order picking/ Supply:

- Incorporation of time components (in case of several sources) to guarantee a prompt compilation of milk-run routes
- A flexible grouping of production goals into routes while incorporating an order number to define the sequence
- Grouping of delivery stations based on delivery frequency in order to define route-based round trips.

Transport control:

- Support of transport management via mobile terminals
- Allocation of tote - trolley - train
- Transparent management of stocks right up to the production station
- Simplified delivery of totes or complete trollies by confirmation of the production station

If these approaches are considered in the system, this efficient and ecologically beneficial delivery system can be implemented.

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Summary

- Warehouse management systems are nowadays quite well developed and are largely modular standard systems. They are partially directed towards particular branches or functions.
- The WMS market in Europe continued to profit in 2008 from orders from the previous year. A downturn has to be expected for 2009 that will begin to pick up moderately in the next few years.
- Logistics shows a strong trend towards general providers.
- Green Logistics: Carrying out logistics operations under ecological, economical and social factors while retaining the environment in its characteristics.
  Efficient use of resources using support of warehouse management systems.
- In times of “free capacity”, many WMS vendors follow the practice of orientating themselves towards logistics trends that will guarantee them an advantage in the future.
- Current development trends:
  Development towards supply-chain management systems;
  Production supply.
- IT systems and “Green Logistics”:
  Essential elements which can be supported by warehouse management systems are route-optimised transports for storage and retrieval operations, preparing client orders into shipments, and load-based strategy definitions.
- Connection with production supply as a further step to the integrated supply chain: inventory can be reduced and costs can be saved through efficient supply of production lines.

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Ideen werden Lösungen

Since 1985, IWL has been offering industrial and business clients services in planning and consultation in the field of logistics and process optimisation. In Germany, we work from headquarters in Ulm.
We are internationally a part of the corporate group “The Supply Chain Group” that is specialised in international logistics projects. This group employs more than 100 logistics consultants.

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