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PSI 
Logistics

*PSI Logistics – Software
for Logistics Networks*

PSI 
Logistics

A partner for optimised business processes

The corporate environment

"The Group's background safeguards the lasting benefits and future orientation of PSI Logistics solutions"-Dipl.-Ing. (FH) Wolfgang Albrecht, CEO of PSI Logistics GmbH and Chairman of the Board of the Intralogistik research group.



PSI AG is one of the largest and most innovative software houses in Germany. The group also has a strong position among leading independent providers of control system solutions in the international market. PSI AG uses detailed branch and process know-how to develop solutions for energy, production, logistics, and infrastructure management. The software products developed by PSI form the basis for solutions that are precisely tailored to the business processes of customers. The company uses the most up-to-date software technologies for its new, branch-specific PSI software solutions. In this way, it creates products that provide customers with a level of optimisation that can scarcely be achieved by the competition.

Thanks to the backing and interdisciplinary transfer of technology provided by the PSI Group, the PSI Logistics GmbH subsidiary has developed

into a specialist supplier of innovative software solutions for logistics. The company's activities centre on warehouse management, logistics networks, and airport solutions. The innovative product developments and integration models in these areas and the know-how gleaned from numerous reference projects over the years constitute the most important competitive advantages of the company. In addition, the organisational and financial background of the group safeguard the long-term benefits and future orientation of the solutions, even for highly complex, extensive projects.

As an innovation leader and driver of modern IT developments, PSI Logistics plays a major part in the work of future-oriented professional forums, research initiatives, and research groups. The interdisciplinary exchange of information increasingly tends to contribute towards the beneficial standardisation of logistics. Moreover, market requirements and findings from logistics research areas benefit the development processes and further optimisation of PSI Logistics' software systems. Thus, the building blocks for new approaches already exist in the architecture and design structures of standard PSI Logistics' products. As a result, the company produces modern, highly flexible systems in line with market requirements that can optimise the business processes of users in the long term.

Future-safe solutions

Modern technologies and maximum flexibility

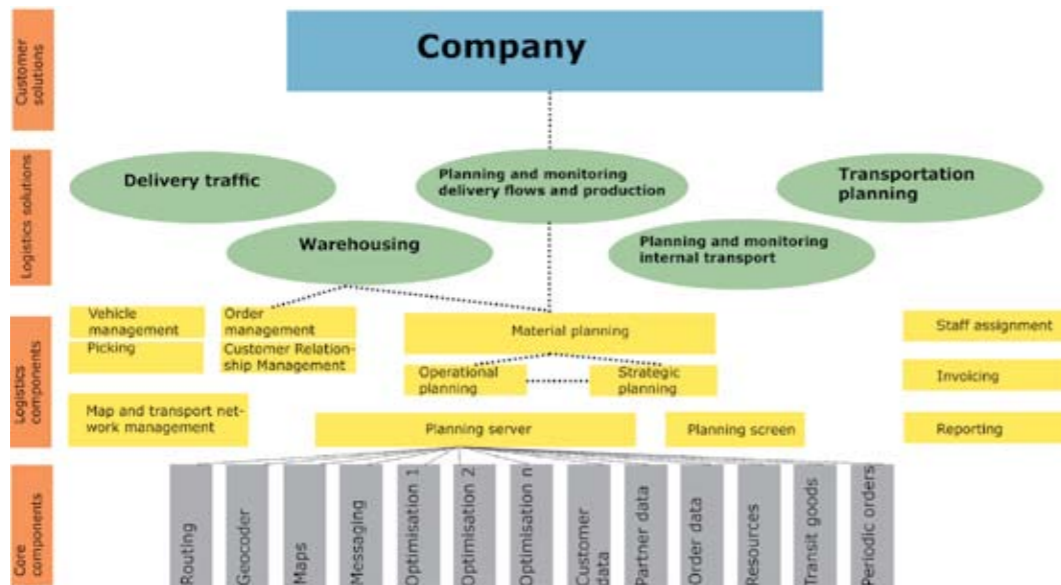
Logistics forms both the basis and an integral part of an increasingly complex business world. Modern logistics software must therefore be capable of integration into a diverse IT world, as well as being adaptable so that it can keep pace with business process developments. PSI Logistics' software products are designed to provide maximum flexibility and scalability. The modular design of PSI software means that it can be assembled and configured to reflect business process chains. The configuration takes place using database mechanisms. As a result, system flexibility is retained even after implementation and for the entire lifecycle of the product. Moreover, taking into account all peripheral costs and follow-on costs (including total cost of ownership (TCO) and total benefits of ownership (TBO)) along with the consistent orientation of solutions to the

improvement of business processes, PSI Logistics' high-quality systems demonstrate definite advantages, even in the long term.

Service-Oriented Java Architectures (SOJA)

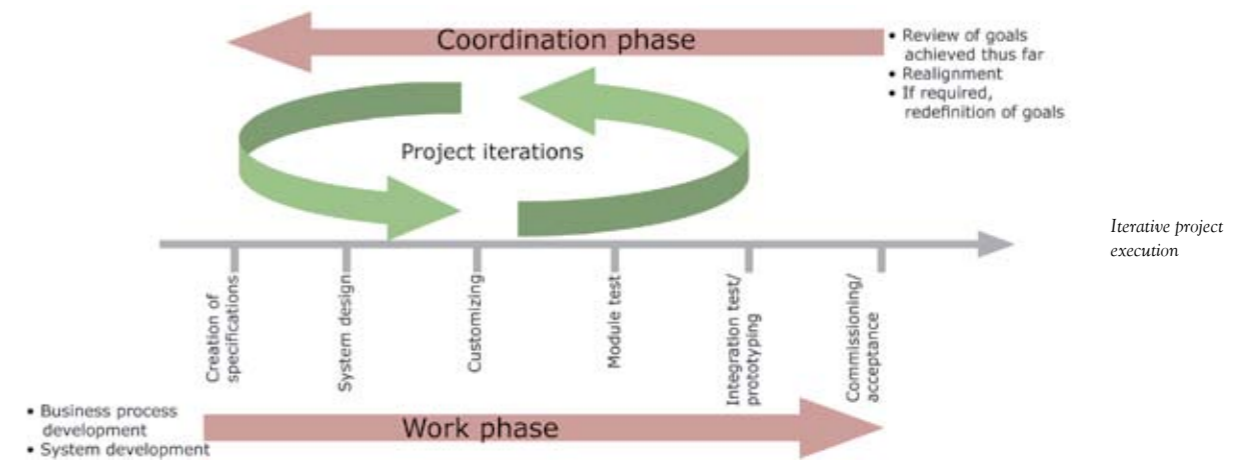
The architecture and technologies used form the fundamental basis for the future-oriented design and integration-capability of software. PSI Logistics' integration-based approach uses the company's own Service-Oriented Java Architecture (SOJA). This involves the definition of software components using technologies such as the Java Enterprise Edition platform (Java EE) and the open Enterprise Service Bus (ESB). These specifications act as a virtual standard that can be used to create multi-layered applications from

Project-specific logistics solutions with 4 layers



Innovative development procedures

Prototyping for time-saving and cost-saving project planning



different modules. In addition, Web services and modern technologies enable the exchange of information between the software components of different corporate levels and from different manufacturers on this basis. This provides networked logistics along the entire supply chain.

Business value first

To ensure that the software systems are precisely tailored to the needs of the customers and implemented in the shortest amount of time possible, PSI Logistics uses "Business Value First", an iterative project implementation procedure. This involves the realisation of a pre-specified system in multiple iterations on the basis of highly flexible standard products. A significant advantage for customers is that a functioning prototype of the subsequent

solution is available at an earlier point in time, enabling a real system to be tested and used to train users. In addition to the reduced implementation time, this procedure provides the maximum possible level of project safety. A specially developed, automated test system is an important basic principle of this implementation method. It enables the permanent, controlled integration of modifications into the test system and gives quick test and integration times for variants and new features, thus ensuring that the prototype supplied to the customer is of the highest possible quality.

The unique combination of modular, scalable standard software, a modern implementation procedure, and an automated test procedure mean that the solutions can be used as soon as possible and guarantee a quick break-even point.

Global logistics network

IT platforms for dynamic structures and processes

PSI Logistics software solutions are used both in operational and strategic/tactical fields. The solutions can be subdivided into two categories: Corporate logistics and airport solutions. The corporate logistics area concentrates on software applications for the operators and users of logistical networks. This includes solutions for intralogistics and for the optimisation of logistical processes throughout the company. The airport solutions area primarily incorporates solutions for the efficient handling of passengers, baggage, and cargo.

Corporate logistics

Logistics constitutes the central link between different company areas, between customers and suppliers, and between producers and dealers. These relationships are shaped by rising cost pressures, globalisation, and resource efficiency. Because of these challenges, efficient processes have become important differentiating factors. The basis for these efficient processes are modern IT systems that enable comprehensive process management. Users are increasingly turning to platform-based solutions. A company's IT systems should be able to centrally and transparently manage, control, and depict the entire infrastructure including running processes, existing resources, and dynamic structures. In addition, integrated,

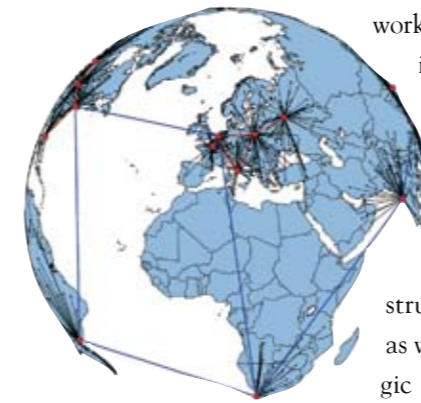


process-controlled interaction between IT infrastructures, IT organisations, and people involved in IT processes is required. Thanks to their modules and tools, PSI software systems meet these market requirements to the greatest extent possible with their standard functions and modern system architecture.

PSIglobal

For the analysis, planning, and optimisation of complex, cross-company logistics networks, PSI Logistics provides the strategic *PSIglobal* software tool. The integrated system enables an overview of the entire logistics network controlled by a company and provides functions for controlling and planning comprehensive logistics processes. *PSIglobal* can be used to plan and verify distribution and procurement networks using optimisation and cost functions, incorporating activities from location planning to the determination of re-

quired resources for transport and warehousing. The *PSIglobal* control functions aim, for example, to enable the coordination of transport networks and warehousing locations. Thus, they allow the dynamic optimisation of inventories and capacity utilisation throughout the entire network. For planning



issues, the software provides simulation functions that can be used for location analysis and structural optimisation as well as for the strategic development of business processes throughout the entire supply chain.

PSIcontrol

The early detection of exceptional situations expands the scope of action for accomplishing logistical tasks. In addition to reducing efforts required to deal with exceptional situations, this also leads to smooth information flows. The cross-company examination of supply processes is much more efficient if the focus is on the processes required rather than on the individual goods. PSI Logistics has been using tried and tested PSI control system technology for this task for many years.

Transparent networks

Coping with cross-company processes

This technology has an important characteristic: In addition to the state of individual systems, it also displays the state of the entire logistics process - on a cross-location basis if required. Thanks to functions provided by PSI's own agent technology, users can be informed of problematic areas and threatened shortages.

Intelligent software agents can continuously monitor processes and trigger automatically definable activities if time or standard deviations are detected. The *PSIcontrol* logistics control



system can be used to visualise all internal logistics processes as well as cross-company flows. The user gets a comprehensive overview of material flows in his or her logistics network and of other relevant processes such as orders, jobs, and orders from stock. The logistics control system automatically informs the user of shortages. To detect trends in good time, key figures are continuously monitored and summarised in status reports.

Efficient intralogistics

Integral warehousing solutions

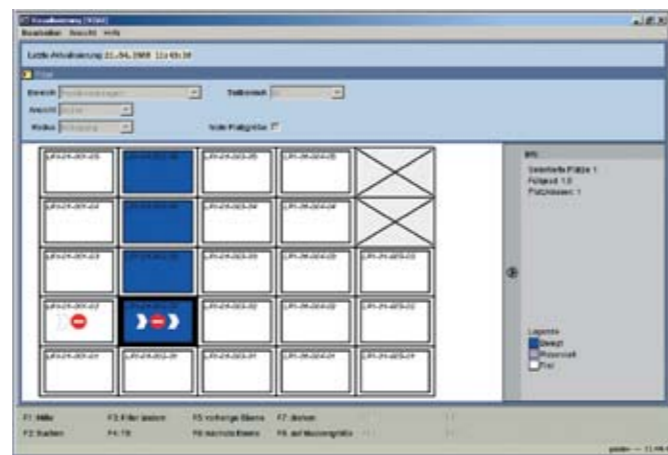
Warehouse management

The warehouse is the hub of modern corporate logistics. With the modular PSImms Warehouse Management System, PSI Logistics provides a software system that supports all relevant warehouse types, strategies, and technologies, even in the standard version. PSImms contains all functions required to control, coordinate, and depict processes in a warehouse. In addition, the software has comprehensive management and planning functions that enable a sustained reduction in stock levels.



The standard product, with its aspect-oriented system architecture, is extremely flexible. PSI Logistics automatic test procedure ensures a high-quality system layout and associated short implementation times, high security throughout projects, and a quick return on the initial investment.

In addition, PSImms can be integrated easily into existing infrastructures. The software's update and release capability ensures long-term benefits. PSImms also opens up further technological possibilities as the technical basis for future integration stages, platform connections, and even services. The result is a high



level of flexibility, maximum profitability, and future-safe investment in efficient processes.

A further level of optimisation can be achieved by using PSImms in combination with the PSIntegration Enterprise Application Integration module. This module has a certified interface to SAP NetWeaver. PSIntegration allows normal users to easily define and configure interface data records. This makes users more independent of software suppliers when designing IT support for their business processes.

Transportation organisation and more

Multimode solutions for the transport chain

Transportation management

The efficient planning and control of transport chains form the basis for comprehensive Supply Chain Manage-



ment and reduced transport costs. To achieve this, IT systems that integrate supply chain processes - as well as the actual transport organisation - into efficient controlling and monitoring procedures are required.

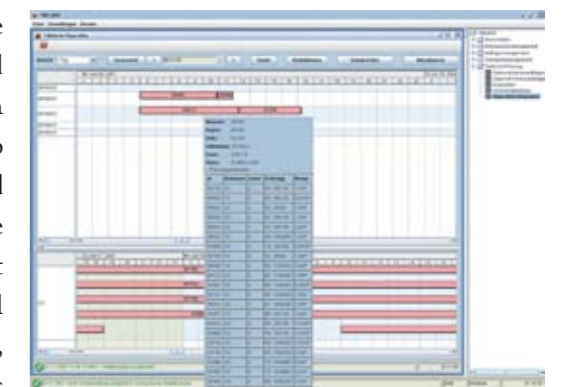
With this in mind, PSI Logistics developed the PSImms Transportation Management System - software for cross-location transportation planning. The base modules of the system provide functions for the transparent planning and comprehensive monitoring of multimode transport chains and the optimisation of communication and goods movements. PSImms provides all required tools for automated transportation planning, proposal-based scheduling, and the dynamic control of logistics networks. Reference projects show that

PSImms can reduce freight costs by more than 10 percent.

The SOJA-based standard software can be used independently or be integrated into existing PSI solutions or back office systems such as SAP. The advantages are gleaned primarily in conjunction with ERP, PPC, and MMS systems. The functional scope of PSImms ranges from tools for analysing demand, shipment structures, and service levels to freight cost settlement and transport creation and optimisation and planning tools for routes, locations, and networks. The system does not only enable logistics-related company processes to be planned and controlled; in addition, your information can be combined and included in comprehensive performance and quality analyses.

PSImms also has a comprehensive, cross-location material planning control centre solution.

This enables the control and optimisation possibilities to be fully realised throughout the entire transport chain and in all locations. Thus, PSImms provides the basis for a comprehensive planning and control system at IT level and for business processes and management.



Airport solutions

Smooth operations on the ground

Safety, reliability, and availability - indispensable in today's airports

Increasingly, competitiveness in air transportation is being decided on the ground. As a result of globalisation, technology advances, and sustained mobility, passenger and freight traffic is increasing, which in turn leads to increased demands relating to the security, reliability, and availability of airport IT systems. Airport solutions must therefore be designed with precision, extremely integration-capable, and must allow the interconnection of information from upstream and downstream systems. PSI Logistics has the required logistics know-how and consulting and IT services to enable this. Using these capabilities, the company develops comprehensive networking and complete solutions - from planning through to services. Customers can thus obtain an overall solution from a single provider.

System solutions

Round-the-clock operation: Airports have to be available on a permanent basis. This applies to the handling of passengers and baggage as well as to freight processes. When tailoring its product portfolio to provide integrated overall solutions, PSI Logistics therefore developed the modular *PSIairport* software, which provides airport so-

lutions with high availability and comprehensive automated processes for all three areas. Now, practically all passenger airports in the country rely on PSI systems to ensure the security and reliability of their extensively automated processes. This airport software, with components for flight scheduling, automatic baggage sorting, freight



handling, and truck dock management, is one of the most comprehensive standard systems for airport applications.

To enable the simple and transparent interconnection of all airport systems, PSI Logistics provides *PSIairport/EAI* Enterprise Application Integration. This allows the flexible configuration of interfaces, the integration of new systems, and the distribution of information in a filtered and controlled manner.

Reliability and efficiency

High-availability systems

Baggage and passengers

PSIairport/FPMS provides users with an easy-to-use tool for managing, updating, and distributing flight schedules. *PSIairport/BHS*, PSI Logistics' baggage handling system, enables the optimum flow of baggage at airports and integrates the systems of all involved airlines, airports, and handling agents.

PSIairport/BRS, the PSI Logistics' baggage reconciliation system, ensures that no piece of baggage is taken on board a plane without its passenger. The system modules are rounded off in the passenger area by components that support passenger handling processes (*PSIairport/DCS*), loading (*PSIairport/W&B*), and integrated maintenance planning for constant 24/7 operation (*PSIairport/M&S*).

A load sheet must be created for each flight. To enable this to be done transparently, quickly, and - if required - with automatic interfaces, *PSIairport/W&B* Weight and Balance was developed. *PSIairport/DCS* provides a state-of-the-art architecture, user-friendliness, and Drag&Drop features for seat allocation, flight documentation printouts, and boarding cards to facilitate check-in and boarding processes and to simplify the associated administrative procedures.

The baggage and passenger product range is rounded off by additional solutions for intelligent, decentralised check-in processes, the multifunctional use of flight information display systems, and value-added solutions for service offerings at airports, hotels, and transport companies.

Air cargo

PSIairport/CARGO provides numerous modules for individual solutions for air freight handling. The airport system is based on SOJA. This enables convenient system enhancements without needing to restructure system landscapes. Supported by real-time information from connected systems, *PSIairport/CARGO* acts as a control, administration, and data transfer system as well as displaying all data and system states. The service spectrum of this air-freight system covers AWB handling, the analysis of operational performance, the control and visualisation of conveyor technology, and ASRS storage - all in one system. In addition, consistent transparency and the incorporation of all storage types, possibilities, and strategies ensure optimised processes for growing amounts of freight traffic.

SOJA - PSIairport/Cargo is based on Service-Oriented Java Architecture

Service and quality

Project reliability

PSI Logistics focuses on the optimisation of customers' business processes. This includes providing almost 100% availability for systems. For these reasons, an individually tailored service concept for the entire product lifecycle always forms an integral part of PSI Logistics' solutions. Following acceptance, the service concept ensures constant operational readiness, the optimum support of business processes, low costs, and - consequently - maximum benefits.

Consulting

Customer consultancy forms an important part of PSI Logistics' services. PSI Logistics is a competent partner for designing and implementing solutions, training courses, and the determination of regular service and maintenance runs.

The company's service offering commences with profitability analyses. This involves recording and analysing



the customer's current processes. Once the target processes have been defined, the potential savings are calculated. However, the consulting service continues to provide help following the implementation of the PSI system. PSI Logistics consultants make sure that an installed solution always provides optimum support for the customer's logistics-related business processes, thus ensuring the maximum level of efficiency in the long term. The most up-to-date tools and procedures are used to analyse and optimise business processes.

Quality

Quality is a fundamental part of PSI Logistics' corporate policy, since PSI solutions are used in critical areas in customers' value-adding chains. Software quality, security, and reliability, reducing costs, and preventing downtime are of the highest priority. PSI Logistics is certified in accordance with ISO 9001.

Quality standards apply equally to software and to the associated consultancy, creation of specifications, and services. These areas are constantly scrutinised by regular customer surveys and customer satisfaction measurements. The customers' trust in the company also depends on PSI Logistics' optimum performance in this field.

Quality as an integral part of corporate philosophy

After-sales service

Increasing efficiency

Training

IT solutions require competent users and administrators. For this reason, key users are taken into account during the execution of projects. PSI Logistics offers a tried and tested training concept that has been tailored to the requirements of various target groups for operating and maintenance personnel. In addition, PSI's own training centre provides comprehensive training possibilities over and above the scope of individual projects.

Services

High availability and a long lifetime, economic operation, and quick access to help if a malfunction occurs - customer-oriented after-sales services and regular maintenance tasks are the most important ways of optimising the use period and operational reliability of IT systems. Even after a solution has been

successfully installed, PSI Logistics supports users with a diverse range of services. Trained maintenance and on-call service personnel use customer-specific service and maintenance models to quickly and competently react to customer requirements. If requested, 24-hour service can be provided. Thus, the PSI Logistics' service team ensures low idle time, high operational reliability, and the highest possible level of customer satisfaction.

Naturally, the main solutions - due to their Web-based technology - are available as on-site installations or ASP services.



Customer orientation

Focusing on the customer

Customer satisfaction and orientation are the most important principles of project management at PSI Logistics. PSI Logistics sees itself as a partner of its customers. This partner-like approach covers all business flows from system planning and development to production and installation processes and after-sale services. In consequence, customer orientation and satisfaction are firm integral parts of the corporate strategy, and are especially important for quality management. PSI Logistics' own quality procedure gives rise to intensive communication with customers, among other things.

The information gleaned is backed up by internal analysis and the results are used for future projects and products. This is because the company uses the dialogue with its customers to decide on the further development of products and services. This continual internal optimisation process enables reliable and high-quality standard products to be created and individually tailored in line with market requirements. Numerous innovative development tools enable efficient project management and the reliable and timely execution of projects. Thus, PSI not only provides systems and solutions that help customers with the optimisation of their business processes over many years. More importantly, it has developed close relationships with its customers, which reflects their trust in the company and can be considered

as both praise and motivation for the future.

