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PSI 
Logistics

*PSItms - Transportation
Management Software
in the Logistical Network*

PSI 
Logistics

Flexibility and operational efficiency

Premium software for market-oriented package solutions

Flexibility and efficiency, transparency, sustainability and information exchange: software is the backbone of modern logistics. For this reason, users require the most comprehensive solutions possible and long-term investment protection.

PSI Logistics has been quick to meet these demands by developing premium software solutions for consistent, transparent logistics processes and efficient logistics management. The goal is to offer the user maximum flexibility and operational efficiency. At the heart of this is the integration and application of new IT structures, technologies and functions in existing IT environments.

Using in-house quality management procedures, PSI Logistics pursues a philosophy of consistent customer orientation. PSI Logistics stays in constant dialogue with customers by consulting them regularly and collaborating with user organisations as well as through

close involvement with research projects and cross-industry bodies. Indeed, the involvement of PSI Logistics in current research projects means that it is acquiring an important role in the the logistics market as a leader of technology and innovation. New knowledge and innovation are incorporated consistently into the further development of the products and services.

All systems of PSI Logistics have a modular design and can be configured in a project-specific manner. Each one can be enhanced flexibly, integrated into existing IT environments and - by growing demand - combined with other PSI software systems. Together, these constitute integrated, premium systems for optimising and controlling complex, multi-layer logistics networks. In addition, the technology transfer and support that this listed corporate group with its locations all around the world is able to provide gives customers added investment protection and a high degree of quality.



Investment security with added value

High integrative capability and modern software architecture



As one of the leading and most innovative software providers for logistics applications, PSI Logistics uses aspect and service orientation to design the architecture of its premium systems around the latest IT developments. This gives rise to a host of advantages for customers. In addition to features that are already considered standard for this market - such as modular design, standardised interfaces, and project-specific configurations - PSI Logistics premium software solutions provide

users with investment protection and future-oriented added value.

The modern system architecture ensures optimum integrative capability - including for integration into SAP environments. This also enables seamless integration of the latest communication technologies. Meanwhile, the upgradeability of the software forms the basis for a long lifetime that keeps pace with the current level of technology. In addition, PSI Logistics is certified in accordance with ISO 9001. This means that

Premium software solutions from PSI guarantee transparency, efficiency, flexibility, and control - both for the systems as well as the consultation and implementation process. Thus, the systems form the basis for high availability, perfect service, optimum quality, and a future-safe investment.

Sustainable system design

Premium software with the character of an individual system

software development and customising are based on a special software quality management (SQM) system. This makes it possible to develop a highly customised standard system right from the specification stage and, of course, throughout the implementation phase. This results in flexible systems with competitive advantages for the user.

The basis for this is a combined project management/prototyping procedure and an automated test procedure developed by PSI Logistics. This procedure serves to safeguard an on-time installation, project documentation, and integral project management. This remarkable combination reduces implementation times and lowers costs so that a prototype of the standard software is ready to run right from the early stages of the project. Also, when the standard software is modified and configured for individual circumstances, any new functions and modified interfaces that are required can be tested promptly for their effects on the overall system and adaptations can be made quickly. This leads to the exceptional quality of a premium software

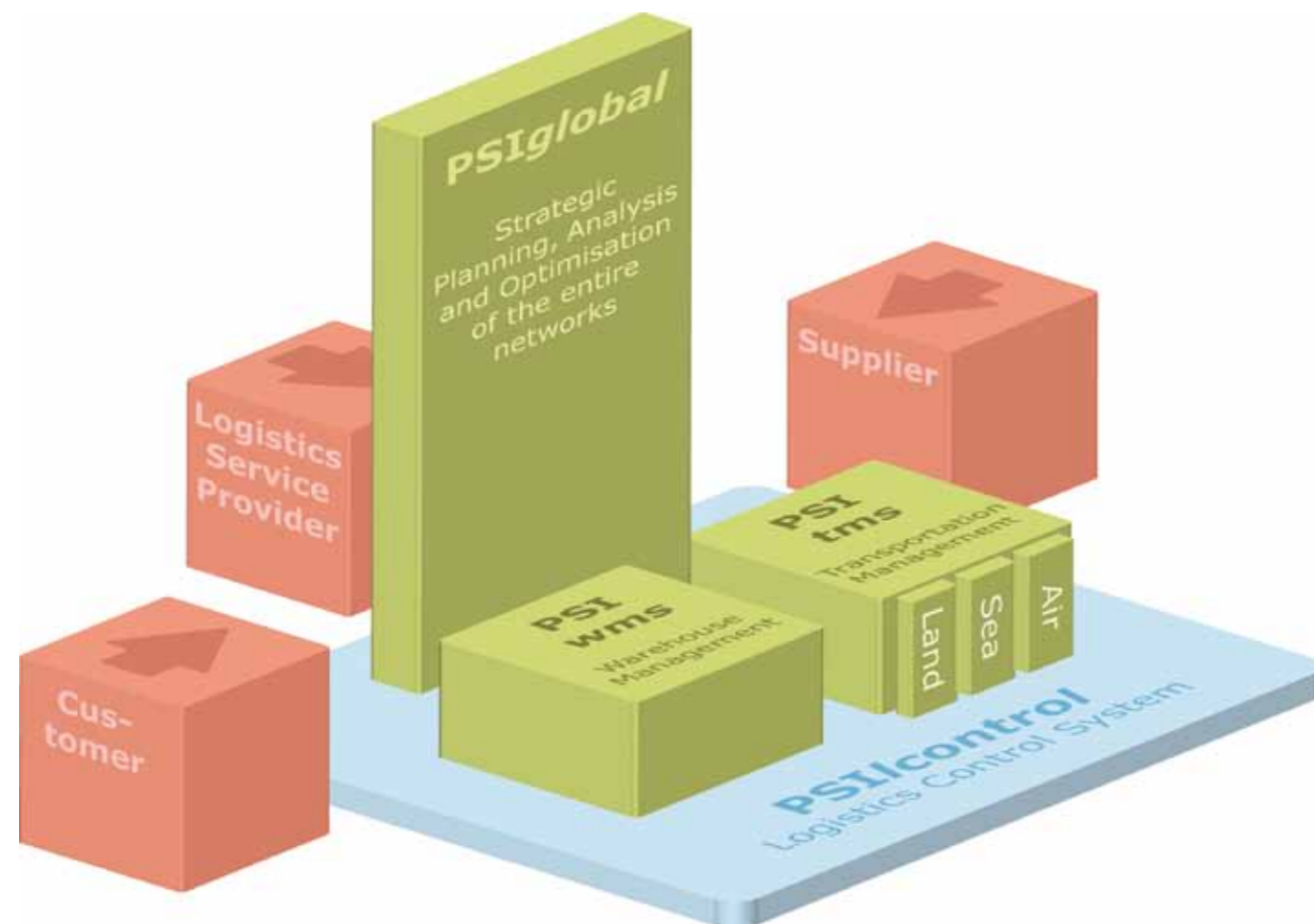
A modern system architecture forms the basis of the wide range of applications that belong to the transportation management system, PSI Tms. The software provides not only functions but also an integrated platform and therefore a unified solution for efficient transport management. This approach of all-encompassing platform systems is based on Service-Oriented Java Architectures (SOJA), developed by PSI Logistics. This involves the definition of software components and services using technologies such as Java Platform Enterprise Edition (Java EE) and the enterprise service bus (ESB). These specifications act as a virtual standard that can be used to create multi-layered applications from different modules.

solution whose flexibility enables the optimisation of existing business processes as well as the generation and support of new business processes. In addition, its high integrative capability provides a sound basis for integrating modern IT infrastructures. Moreover, this accommodates the use of future IT technologies and functions, even in existing IT landscapes such as an SAP environment.

Unique product range

Designed for maximum integrative collaboration

PSI Logistics has a unique product range for the strategic, tactical, and operational planning, control, and optimisation of logistics networks. A special feature is the systems' high potential for integration which means each piece of software can be used as a standalone product or operated in conjunction with other premium PSI products. Also, the systems can be integrated effortlessly into existing IT landscapes. With its modern architecture and wide range of standardised interfaces, premium software solutions from PSI Logistics are designed for a high level of process-oriented collaboration. For example, the competencies of PSI Logistics in SOA environments and SAP NetWeaver give rise to a large number of possibilities for integrating other software products and special logistics applications into SAP ERP landscapes with no discontinuation of media. The trademark flexibility of PSI products is reflected in its high integrative capability, especially with regards to the degree of optimisation that the software allows during the modelling of changing business processes. This means that the



Unique product range

Control and optimisation across company borders

company's different products - each of which is a piece of premium software with the character of an individualised standard system - complement each other comfortably with their functions. For example, the PSIwms warehouse management system complements the PSI function modules of PSI tms to provide sustained optimisation of stock and a modern, cross-industry warehouse solution. Even the standard version of PSIwms supports all relevant warehouse types, strategies and technologies. In addition, concepts such as resource efficiency and green logistics strategies can be taken into account.



The logistics control system PSIcontrol, currently one of the most up-to-date control systems on the market, gathers data from heterogeneous subsystems so that you can visualise processes both within one location and across company borders. In this way, PSIcontrol is able to convey the status of complex logistics processes, reduce efforts when processing exceptional situations, and ensure smooth flows of material and information with extremely short cycle times and with optimum capacity utilisation. The integrated planning system PSIglobal boasts simulation functions which, with just a

few mouse clicks, allow you to plan and check the efficiency of entire distribution and procurement networks, from location planning to determining the resources required for transportation and warehousing.

Along with other logistics-specific premium software products, users of PSI systems have an integrated overview of the entire product spectrum and are able to steer complex logistics networks. In the current market this constitutes a unique product range for efficiency and sustainability.

Manage exceptional situations with confidence

Optimising logistics networks

Sustainability and multimode concepts



Green logistics have become a focus of the logistics industry as a consequence of rising energy prices. With a conflict between ecological demands on the one hand and costs and services on the other, a balance must be struck between sustainability and multimode approaches. The product portfolio of PSI Logistics offers a sound basis for such challenges and requirements. PSIGlobal, for example, provides planning software and control software for comprehensive logistics management. With its simulation and optimisation functions, it enables you to plan, analyse and control multi-layer, multimode logistics networks, especially when incorporating features of green logistics. PSIGlobal lets you contrast and compare systematically the cost-benefit relationships between ecological effects and economic requirements according to individual needs. This results in effi-

Reduce transport costs by up to ten percent

cient logistical networks that have been designed from the environmental viewpoint of green logistics without incurring significant cost increases. Indeed, PSI $Itms$ aims to reduce costs through comprehensive resource management and transport planning whilst automatically factoring in current toll charges, integration of intermodal transport chains and efficient vehicle fleet organisation. With its functions for intelligent route planning and loading space optimisation, the premium software solution reduces the transport mileage considerably. In turn, the system proposals for involving other carriers help you to re-route flows of goods onto ship and rail. The corresponding reductions in road transport mileage, empty runs and partially filled shipments lead to great savings in CO₂ emissions. The optimised CO₂ footprint compliments the sustainability aspects of climate protection with considerable cost savings.

In its capacity as a IT consultancy, PSI Logistics also offers industrial enterprises and service providers an audit of their freight costs. Using real shipment data and freight conditions, PSI Logistics helps interested parties to identifying where savings can be made in their transport logistics.

Turn potential savings into real savings

Automated key figure calculation for efficient financial controlling



Efficient planning and control of transport chains affects shippers and logistics service providers in equal measure. This is because these efficiencies not only lower transportation costs considerably; with comprehensive supply chain management, the link between customer and supplier as well as producer and retailer becomes the basis for positive business growth. In addition to vehicle fleet organisation, services such as storage, customs processing and packing as well as the upstream and downstream processes that happen beyond the company's borders are all part

PSI $Itms$: Lightens the workload and increases the efficiency of dispatchers by up to 50 percent, has negligible error rates, speeds up processing times by up to 95 percent, reduces organisation and planning expenditure by up to 80 percent and improves resource utilisation by up to 50 percent.

of efficient controlling and monitoring. These are requirements that the functions of the PSI $Itms$ premium software solution are designed for.

Taking key figures as an example, contract, invoice and customer management form an important basis that determines the solvency of a company. How many days does it take after issuing an invoice for the invoice amount to be settled? How many potentially lucrative contracts fall by the wayside due to

reasons of risk? How high are the costs for damages and compensation with each claim? PSI $Itms$ provides the key figures you need for risk management in the case of liability and contractual penalty rulings. Consequently, the premium software solution creates the conditions that are necessary for strategic decisions and business process flexibility.

In combination with the clear, user-friendly user interface, the functions of PSI $Itms$ lighten the workload and increase the efficiency of dispatchers. This results in faster processing times, reduced organisation and planning expenditure, efficient processes and greatly improved resource utilisation. In the case of transportation costs alone, direct savings of up to ten percent can be made.

With its range of services and functions, PSI $Itms$ constitutes the comprehensive IT solution for optimised vehicle fleet organisation and transport planning as well as efficient control and monitoring of the supply chain processes - including beyond company borders.

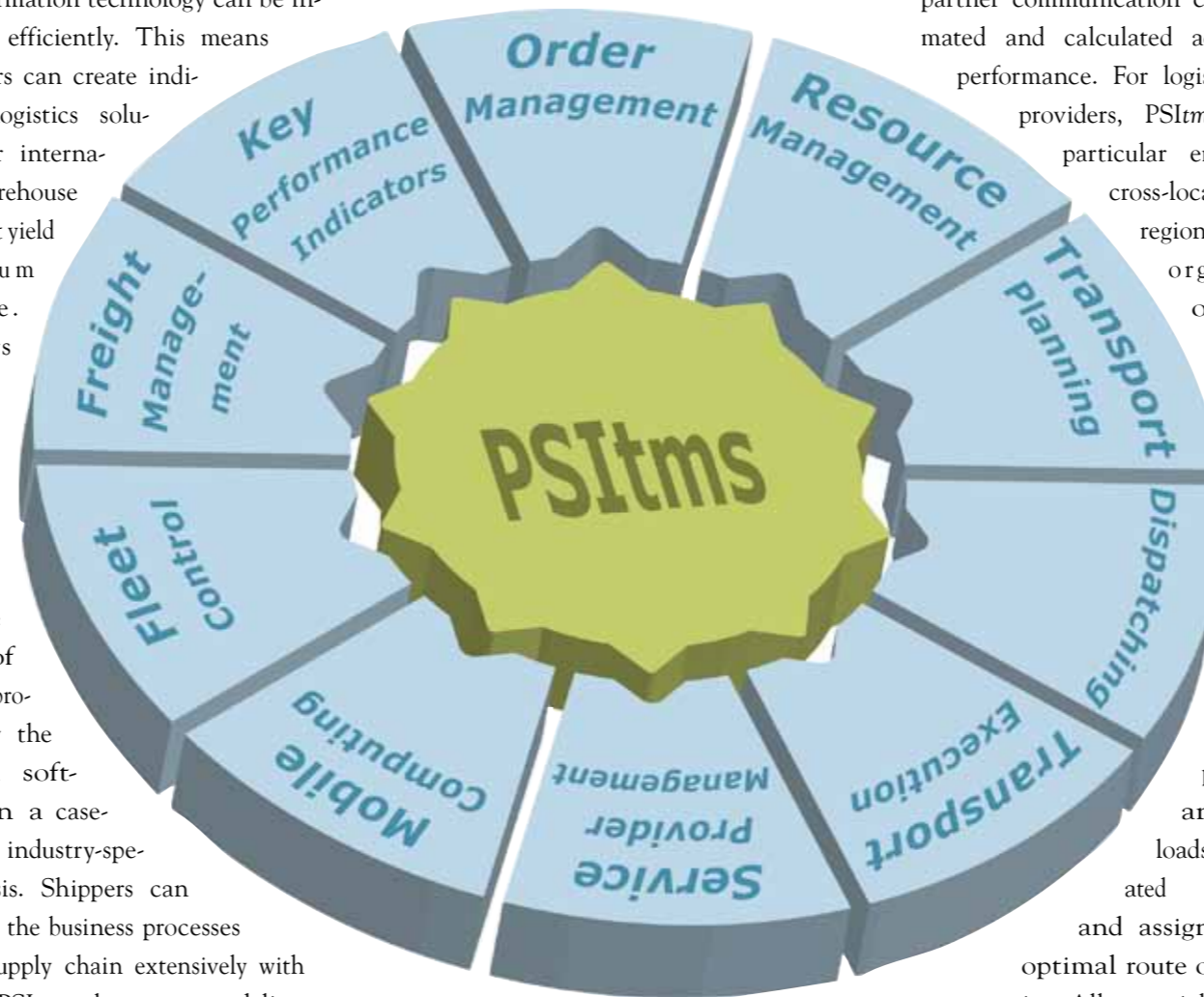
Automated business processes

Ten standard modules for the requirements of the market

Future-oriented flexibility
for business processes and
technologies

As an instrument to make logistics planning more efficient, the PSItms transportation management system optimises the flows of communication and goods and takes care of dispatching, controlling and monitoring as well as cross-region and cross-location order management. With the core functions of the ten basis modules, PSItms constitutes a platform for planning and optimisation as well as flexible, sustainable and efficient national, international and global logistics networks. Interactive mapping material means that even complex transport and logistics networks can be planned and displayed easily. In addition, you can define sets of rules for multi-level dispatching, multi-channels and supply chains, for example. Automation functions also make it easy to integrate tariffs and conditions or distances and travel times of different carriers. This means that you can manage business relationships transparently and assign cost pools to the

appropriate parties. In addition, changes to the general conditions and new functional requirements of logistics and information technology can be integrated efficiently. This means that users can create individual logistics solutions for international warehouse flows that yield maximum revenue. Shippers and logistics service providers profit from the range of services provided by the premium software on a case-by-case, industry-specific basis. Shippers can automate the business processes of the supply chain extensively with PSItms. PSItms also converts delivery orders into optimal bundles of trans-



port orders according to the most reasonably-priced carrier. If required, service provider selection and business partner communication can be automated and calculated according to performance. For logistics service providers, PSItms places a particular emphasis on cross-location, cross-region and cross-organisation optimisation of resources in the transport network. This means that shipments, partial loads and full loads can be created automatically and assigned to the optimal route of transport or carrier. All material orders and goods delivery orders are controlled in

Automated business processes

Transparency for costs and revenues

real time and transferred automatically to customer-optimised transport orders. Automated planning of trips and loading spaces can occur on multiple levels. The transparency that PSItms provides for order processing and resource utilisation offers an overview of the costs and revenues. In addition, it generates informative key performance indicators that can be used to identify weak points quickly, highlight possible savings precisely and forecast future revenues reliably.

As is the case with all premium products from PSI Logistics, PSItms has all benefits of a quality management system, such as prototyping, quick implementation, upgradeability and low total costs of ownership. Standard systems can be integrated into SAP landscapes and connected to telematic systems. Moreover, the basic configuration of PSItms already has multiple languages for all important economic regions. An important area of support for cross-location management.

Identify weak points in the
system quickly

Flexible process planning

Order processing according to specific requirements

Order Management

The order management represents the starting point of the process chain in PSItms. The priority is to automate order processing as much as possible whereby, taking the overall process into account, the individual sub-processes are planned and controlled in the optimal way. Due to this segmentation, each service can be calculated immediately after execution - as and when required and even in real-time with mobile communication devices. Depending on the task, PSItms can convert the orders into shipments and partial shipments such as a preliminary leg, main leg and subsequent leg and, if required, this can be done in a multimodal manner. PSItms therefore permits transparent control of the processes, including in multi-channel networks. In addition, the software allows you to embed extra tasks into the orders. In the context of value-added

services, for example, these tasks can convert orders into service orders and trigger corresponding processes. The standard premium software solution is ready for this in the interfaces that are provided for the surrounding IT infrastructure of ERP and WMS systems or external data exchange via the Internet and EDI. Automatic data transfer and order checking means that minimal data entry effort is required. Data checking, geocoding and routing, which run as background processes in the order management module of PSItms, prevent address errors, delivery errors and incorrect trips.

In addition, involvement of external shipments at the earliest possible opportunity creates significant potential for saving. The same applies to the targeted resource utilisation and the optimisation of process times and process costs when planning and controlling the business processes.



Flexible process planning

Assign available capacities in line with the order



Resource Management

The resource management module in PSItms gives logistics service providers and shippers user-friendly functions for managing all the components that are required for efficient handling of day-to-day business. As a premium software solution, PSItms is designed for constant intermodality. The suite of functions allows you map and manage the vehicle fleet according to logistical, technical and business considerations. In addition, you can specify additional equipment features, equipment characteristics, employee qualifications and transport goods and you can define assignments or bans on loading certain goods together. Against this backdrop, PSItms constitutes a comprehensive tool for the management and efficient assignment of all available resources in line with the requirements of the order. Moreover, the entered values are available for determining key performance indicators.

Transport Planning

Just-in-time models and the ability to cooperate and take special customer requirements into account necessitate flexible and reliable transport planning that can be done at short notice. Consistent route, loading space and cost optimisation are therefore distinctive features of automated transport planning with PSItms. A special feature of the module is the synergy with the functions of interactive dispatching. With its standard functions and the user-specific information that is available, the premium software solution creates a system proposal for transport planning automatically. Interactive dispatching then occurs on this basis. If required, dispatchers can select different strategies for the trips and combine different carriers. At the start of planning, the system incorporates restrictions and information about capacities automatically. PSItms also takes legal requirements such as driving and rest periods into account.

*Automated planning,
interactive dispatching*

Transparency for planning and control

Dispatching control centre with cockpit functions for all processes

Dispatching

Interactive dispatching enhances automatic transport planning. Highly-efficient dispatching processes are possible whilst taking special customer requirements into account at the same time. You can use the functions of the dispatching module to modify the results of automatic planning according to current requirements and then to re-

other trips. You can also book slots for loading and unloading as required, or change the time frames of the trips.

The suite of functions is embedded into the environment of a multi-site dispatching control centre. As a central collection and filtering station for all required data, the control centre has the function of a cockpit, equipped with an ergonomic display for comprehensive transparency and an integrated overview of all processes. This enables you to

display the current situations, states and time processes in the supply chain according to different cockpit configurations. The screen display types according to the particular preferences of the user. With just a few mouse clicks, the cockpit elements can be edited, created,

lease them for implementation. When doing this, PSItms creates dispatching proposals that can be changed according to different planning horizons with Gantt charts (electronic dispatching boards) or tables. Optionally, you can create trips with unplanned transport orders, add transport orders to planned trips or move transport orders to

released, magnified and displayed in parallel. It is therefore easy to quickly identify and eliminate deviations from target values and states, deadlines, or goods criteria. The modern, electronic workstation takes a great burden off dispatchers and leads to increases in efficiency, shortened and safer processes and significant gains in productivity.



Modern, cross-location workstations and an integrated overview of processes

Transparency for planning and control

Integrative information and data exchange

Transport Execution

In PSItms, the transport execution module is used to monitor and control the operational transport processes. Subcontractors can be assigned automatically and the Internet can be used to proactively inform participating business partners about current processing statuses. Transport execution is checked and controlled in the background automatically and continuously. Ongoing checks and an interactive visualisation of the processes can be made by comparing target values and actual values; meanwhile, shipments, vehicles, loading materials and orders can be tracked and traced almost in real-time. The module's comprehensive document management function means that it is easy to manage orders, shipping documents, lists and so on.

Service Provider Management

In PSItms, the service provider management module provides shippers with an efficient tool for flexible integration of the participating service providers in the processes. This results in effective cooperation between all parties involved.



Firstly, service provider management makes it easy to obtain and manage quotes and store contracts. You can identify available resources, services and operational areas and add tariffs to defined service ranges. This means that you have complete transparency for quantities, routes, services and prices. The result is that throughout the lifetime of a partnership, you can enter planned and actual costs in detail and, using dialogue functions, view and assign them at any time. In addition, the module also has options that you can use to automate the credit note procedures or freight billing.

After the planning phase, data interfaces, dialogue accesses and the integrated PSItms Web portal allow for ongoing communication and data exchange between participants. This means that service providers, loading points and unloading points are involved, informed on-time and notified of planned routes, quantities, loading sequences and target times.

Involve service providers in the processes on-time

Efficient control of costs and services

Faster order processing and an improved quality of service

Mobile Computing

The mobile computing module brings efficiency and transparency to the operational processes. Order processing using mobile end devices - as well as package scanning and digital signatures - means that important data is available in real-time, as and when required. The PSItms premium software solution ensures that information is processed efficiently. This speeds up order processing considerably, improves the quality of service for customers and partners and makes it possible to invoice customers immediately after services have been provided.

The efficient information exchange also makes decision making easy when there are unplanned changes. Operational steps can be initiated immediately in this way. For example, you can readjust pick-ups and maintain trips in the most optimal way or provide employees who are on site with access to current information. It is easy to integrate additional technical components that support the operational processes and which broaden the range of services offered - for example, for navigation and positioning or for devices such as vehicle scales, document printers and temperature controls. With this range of services, the mobile computing module provides optimum tracking and tracing.



Fleet Control

The functions of the fleet control in PSItms provide information about the current operational situation in the transport network and allow dispatchers to make controlled interventions in the processes. With its pre-installed operational alternatives, you can adapt the module to the exact requirements of each operation either as an in-house solution for one location or as a hosting solution for several locations. The results of the fleet control module lead to an exceptionally detailed profile of the vehicles in each operational run. The vehicles of the fleet that have been integrated into the transportation management system use the fleet control module to transfer your position data - and the accompanying event data - to dispatching in real-time. With the module, numerous functions for evaluation, intervention and controlling are at the fingertips of the dispatcher.

Efficient control of costs and services

Meaningful key figures with added value potential

Freight Management

Logistics service providers and shippers can use the freight management module to optimise how the services provided are determined and billed. The range of functions include many options for simulating the freight costs so that you can select the most profitable variant during planning, precalculate and strategically buy freight, model tariffs and conditions in a customer-specific way, and calculate freight automatically. Also, condition values can



be displayed with a high level of detail. The comprehensive evaluation and reporting functions not only provide useful figures for financial controlling; in addition, the module provides functions which, on the basis of contracts, tariffs and shipment costs, continuously collect and evaluate key figures for the subsequent tracking of transport prices and costs, for example. In PSItms, freight management supports shippers also when tendering, comparing quotations and during selection procedures.

Key Performance Indicators

Industry-specific and process-specific key figures form the basis of strategic financial controlling. The key performance indicators module in PSItms makes reliable statements about the core processes in the logistics network and your performance. To do this, all relevant data is transferred to the module continuously. After being processed into meaningful statistics and analyses, this data then forms the starting point for efficient controlling of costs and services. The functions and tools of the module permit a wide range of user-defined analyses that can be displayed in flexible combinations of reports, lists and diagrams or as sales statistics, order creation forms and annual or monthly evaluations. Likewise, you can create external services statistics or determine gross profit margins with just a few mouse clicks. A particularly noteworthy feature is the gross profit ticker for workload and profit control. This tool gives a continual update on the total income for the current day and month and lets you analyse vehicle values and trips separately. A further advantage of the module is that user-defined grouping allows all key figures to be used in other applications, perhaps as the basis for negotiations with customers or service providers.

Integrated gross profit ticker for workload and profit information

A partner-like relationship with customers

After-sales services including training, maintenance, and support

Customer satisfaction and orientation are of the utmost importance for the project management team at PSI Logistics and the whole company sees itself as a partner of the customer. This partner approach is applied right from system planning and development through to production and installation processes and after-sales service.

Even during the implementation phase, PSI Logistics offers its customers training courses on the new software so that employees can understand how the system works. There is a range of support and maintenance options which ensure that the system technology is regularly

checked and that the system remains available.

Finally, internal PSI quality management procedures complete the range of services. These procedures ensure that there is rigorous communication with the customer. In addition, the information gained is backed up by internal analyses and the results are used for future projects and products. This is because PSI Logistics relies upon dialogue with customers when developing its products and services. This gives rise to market-driven, reliable, and high-quality standard products with a high level of optimisation for customers' business processes.



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