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Issue 6

Flexible Automatic
Small Parts Warehouse
for PC Component
Distributor



**Flexible Automatic
Small Parts Warehouse for
PC Component Distributor**

**High Efficiency
without Stress**

COS AG has grown into a top company over the last few years distributing computer parts to retailers and wholesalers. In 2000, due to increasing logistics requirements, a new company headquarters and distribution center was put into operation. The core of this highly flexible and dynamically designed warehouse and shipping area is an automatic small parts warehouse, equipped with modern software and a smart architecture that can manage future growth without problems.

IT Supply at IT's best – is the slogan of COS AG distribution and it has adjusted its business activity to mimic the slogan. COS AG is located in the center of Hesse in the town of Linden, Germany. Its primary business includes the supply of computer components, peripheral equipment and software to computer dealers and wholesalers. This collaboration with over one-hundred leading suppliers enables them to sell a comprehensive, market driven line and an up-to-date product selection. COS AG was founded in 1990, as a retail operation under the name P&T Computer GmbH. Only four years later, accompanied by quick growth, the company decided to become a distributor before it was sold to the COS AG in 1998. The Swiss company, also active in the distribution area, offers consulting and auctions on the Internet as well. In September 2002, during a drastic change in corporate structure, all of the subsidiaries were incorporated with the Swiss parent company. Through innovation and a high degree of flexibility and dependability, the company started a refin-



ing process among the computer part distributors. Now, the company from Linden belongs to one of the top three companies with regard to sales volume and name recognition.

Outgrowing the Facilities

A strict and efficiently organized distribution network many times determines the success of such companies. As in other segments of the industry, shipment sizes have become smaller and smaller, along with the order cycle. As a result, the cost to distribute increased steadily, and at the end of 1997, COS AG put a new distribution center into operation. But a mere two years later they had already outgrown their facilities. An expansion at their current location was not possible, and additional outside warehouses could only be considered as an interim solution. By the end of 1999, "Our growth limit had been reached, and we had to think of a unique solution," were the comments of Gerd Dirschauer, Manager of Planning and Organization of company logistics. After only four months of planning, on April 1, 2000 ground breaking for a new distribution center took place, which also included a large office complex. In the fall of the same year, the move of the entire company was finished. Then, two years later, after the large expansion, the logistic sequences had to be optimized in the conventional warehouse and shipping area. "As flexible as we thought our manual handling was, we could not keep up

with the present and projected future requirements," Dirschauer says. "We were made aware that we needed the support of automatic systems as well."

Limits of the Automation

The computer business, as with so many businesses in the wholesale and retail industry, is subject to strong seasonal fluctuations. In only the last three months of the year COS generated 40% of its yearly sales. But in addition, the daily work requirements did not run smoothly. Approximately 50% of all daily orders are received by the shipping department after 3:00 PM and must be processed and shipped the same day. About 10% of all orders are received at night or early in the morning hours through the Internet. These circumstances played a decisive roll in planning the new logistics processes. "In order to cover all aspects that needed to be addressed, the technical expenditure of a pure automatic solution would have been much too high," declared Mr. Dirschauer. "We did not want to invest in a system that could not be utilized for most of the workday." A simulation where real order sequences of entire days were enacted provided confirmation for a flexible, partially automatic solution according to the "Goods-to-Man" principle." This solution came the closest to the COS requirements. The degree of automation had to be designed in a way that it could handle a certain level of

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the picking process, but during peak times, loads can also be processed through manual intervention.

Successful Search for a Partner

According to Dirschauer who described the selection process for a suitable partner, "We solicited bids and proposals from nearly all companies with a good reputation in this field, and the decision was certainly not simple. After an extensive examination of all concepts, only one company remained that was in the position to implement all of our concepts." In 2002, viastore systems received the order to build an automatic small parts warehouse including the coordination of the entire project. The order also included building a conveyor system to the automatic small parts warehouse and the implementation of the Warehouse Management System (WMS). With regard to the last point, the firm from Stuttgart demonstrated their knowledge with regard to our SAP software and distinguished themselves from their competition.

In the middle of the bid examination phase, COS management made the decision to convert the entire corporation to the SAP electronic

data processing structure. "For this reason, we were looking for a partner who could provide us support with software that doesn't end at the interface to our present system or future SAP system," Dirschauer says. And, "Last but not least viastore systems as an SAP partner simply presented the most convincing arguments."

Installation with running operation

First, however, viastore had to prove its competence with the hardware. Shortly after the order was awarded, implementation of the project began and the timeframe allowed for manufacturing and installing the new equipment was extremely short. On one hand, preparation for the upcoming Christmas holiday business was already running, on the other hand, COS was busy dealing with a huge increase in product volume. Interrupting several workdays for assembly and installation of the automatic small parts warehouse was not even a consideration. A partnership between the project teams of both companies jointly developed an assembly concept that enabled the installation of the new equipment without any major problems, even without interfering with



In the mini-load warehouse, viaspeed Storage/Retrieval (S/R) machines quickly and efficiently store and retrieve the high-quality inventory

an increasing number of orders to be processed. Dirschauer was happy to report that, "Our calculations were right on; the equipment was put into operation at the exact ideal point in time for us," and he was extremely impressed with the excellent cooperation from viastore.

Man + Machine + Software = Teamwork

The COS product line has grown to 6,500 different items. Less than 20% of these items amount to 80% of the movements in the warehouse. All of the different items are differentiated according to A, B, and C articles that are stored in separate areas. Before the automation was put in place, this high rack area was operated manually with lift trucks. Now, it is set up as a three aisle automatic warehouse. Incoming orders are input into the internal merchandise economic system and then transferred to the viastore Warehouse Management System (WMS). The viad@t WMS then processes the order data into commands for the automatic small parts warehouse and to pick lists for the manual area. During processing, a certain container (listed as data) is assigned to each order that is then filled on its way through the manual storage area. All storage areas from receiving to packaging and delivery locations are connected to each other through a cleverly manufactured conveyor system.

The central point in the distribution center is the new automatic small parts (mini-load) warehouse. The design of the equipment is unusual and extremely efficient. Between the

Technical Data

Storage area

- Building clear height: 12.5 m (41 ft.)
- Area: 10,500 m² (34,500 ft.²)

Three-aisle container warehouse (automatic small parts (mini-load) warehouse)

- 10,500 storage locations
- System length: 60 m (197 ft.)
- Height: 12 m (39 ft.)
- Container size: 600 mm (23.62 in.) x 800 mm (31.50 in.), 2 different heights
- Single and double deep storage
- 3 viaspeed Storage/Retrieval machines
- Load handling device: Belt conveyor

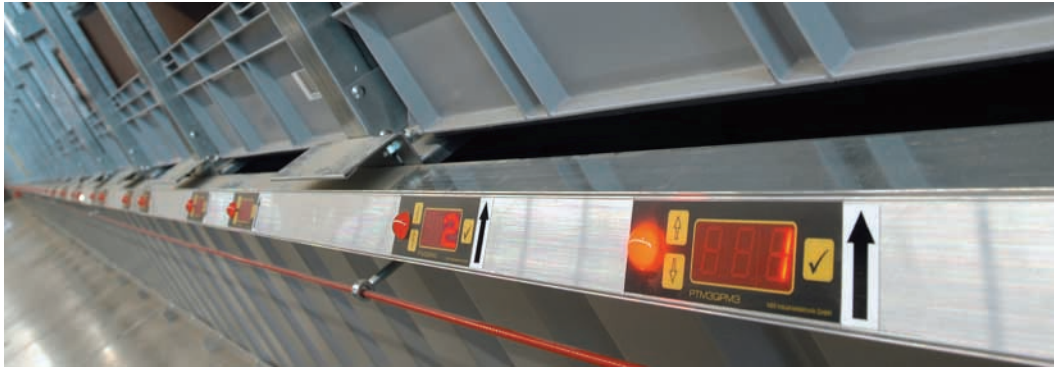
Software

- viad@t Warehouse Management System
- Central SAP LES for manual area, picking/shipping
- 4 multi-functional picking places
- 2 basic pick stations
- Pick-to-Light system
- Conveyor system for empty containers and packaging containers
- 20 shipping spurs including empty returns
- 530 dynamic storage positions
- 7 staging spurs for empty containers



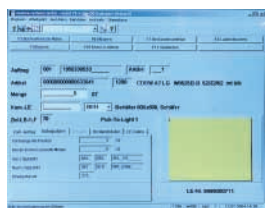
During peak periods, up to five orders can be processed simultaneously at the picking stations of the automatic small parts (mini-load) warehouse

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No errors with Pick-to-Light. The order picker confirms the correct quantity of the parts for his order by push button.

An employee scans the bar code of the picked container with an MDE unit and closes the order.



viad@t VS offers a clear easy to operate user interface that is easy to learn.

aisles of the mini-load are two three-position picking stations over the total length of 60 meters. In front of the automatic small parts warehouse there are a total of six picking workstations, of which four are designed for multiple functions. Here, up to five orders can be processed simultaneously. In quiet times, the containers from the automatic small parts warehouse are moved to the workplaces. When parts are removed, they are confirmed in viad@t at the computer-equipped work station. Dirschauer describing the conversion of the picking process from pick lists to data input, "Working with a PC at the workstations was new for our employees, but they quickly became familiar with the new technology because the user interface from viad@t is clearly arranged and very easy to learn. This also held true for employees who don't have a computer at home."

Late in the afternoon, when the order volume increases, a large number of the orders are worked off at the picking workstations. The two lower levels of the automatic small parts warehouse are open over the entire length. Here, the "viaspeed" Storage/Retrieval (S/R) machines move the items needed for an order according to the principle "Goods-to-Man" using the shortest possible distance. A Pick-to-Light system

clearly shows the order picker the location and quantity of items that have to be picked. As each item is removed from the rack it is confirmed by push button. If an order is ready, the responsible employee acknowledges this by scanning the bar code of the respective container with a mobile MDE scanner. The container is moved through the use of a roller conveyor into the packaging area where the order is made ready for shipment. From the data produced during the picking process, a delivery order is created and printed. Thomas Groß, the warehouse manager of the distribution center in Linden, expresses the success of picking without a pick list: "By the automatic storage and staging of the merchandise in the automatic small parts warehouse, the annoying check-off of parts lists is done away with. Our order pickers can work much more efficiently because they can now concentrate exclusively on the order picking process."

New Dimensions in the Picking Area

Thomas Groß as the warehouse manager is very satisfied with the improvement in his area of responsibility: "The small parts warehouse opened up new dimensions in our picking area. With the same number of employees we were able to increase

our total packaging and delivery speed considerably, and our already extremely good delivery quality has been further improved."

Mr. Groß has also noted a greater motivation by his employees. "It's great to see the enthusiasm of our co-workers. Most of them have become familiar with the technology and they take care that the small parts warehouse remains in good order."

With a specially designed planned maintenance and service concept, COS employees see to it that their equipment continues to function dependably. For the most part, routine inspections and repairs are carried out by internal personnel. In addition to that, the hotline service from viastore helps keep down times as short as possible.

All functions of the automatic small parts warehouse can be viewed through the use of the Internet in the viastore service center in Stuttgart. This way, the viastore service engineers can provide immediate help in case of emergencies. The interaction of the automated and manual work processes has satisfied all expectations in the COS AG distribution center. Updating of the logistics will continue, as soon as the electronic data conversion to SAP is finished, a radio data solution will be implemented in all areas where manual picking still takes place.

The conveyor system to the automatic small parts warehouse was designed in such a way that it can easily be expanded by one or several aisles. From the logistics side, there are no limits for continued growth.

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