Faster rhythm

THE PARCEL HUB IS THE HEART OF THE SUPPLY CHAIN. MAKE YOURS BEAT SMOOTHLY AND FASTER

Within the supply chain of a postal company a parcel hub can be considered the heart of the whole network: its performance is decisive for the effectiveness and efficiency of the entire system. As the focus of most operators lies on the modernisation and automation of the sorting centre processes, the yard is often a neglected part of this complex entity. Even though it determines the heartbeat of the whole supply chain by linking a high-end sortation system and a dynamic transportation network, the focus often does not go beyond the sortation equipment.

Surrounding the sorting complex, this crucial area turns out to be a major risk factor for the whole value chain of parcel management: Though sorting and warehousing processes are fully automated and accordingly optimised, in the yard incoming and outgoing consignments are often managed using the traditional clipboard. Efficiency gains in the sorting process are diminished while the agility of the transportation network is considerably impaired by improvable yard processes: Both endanger the efficient flow of the entire supply chain.

This need not be. There are powerful intelligent software solutions for yard management that optimise all yard processes by closely integrating all relevant stakeholders and ultimately removing this limiting bottleneck in the value chain.

In order to examine the importance of yard management for value creation, we will compare two companies, using alternative yard management approaches:
• Silver Ltd: manual pen-and-paper processes;
• Gold Ltd: integrated intelligent yard management software.
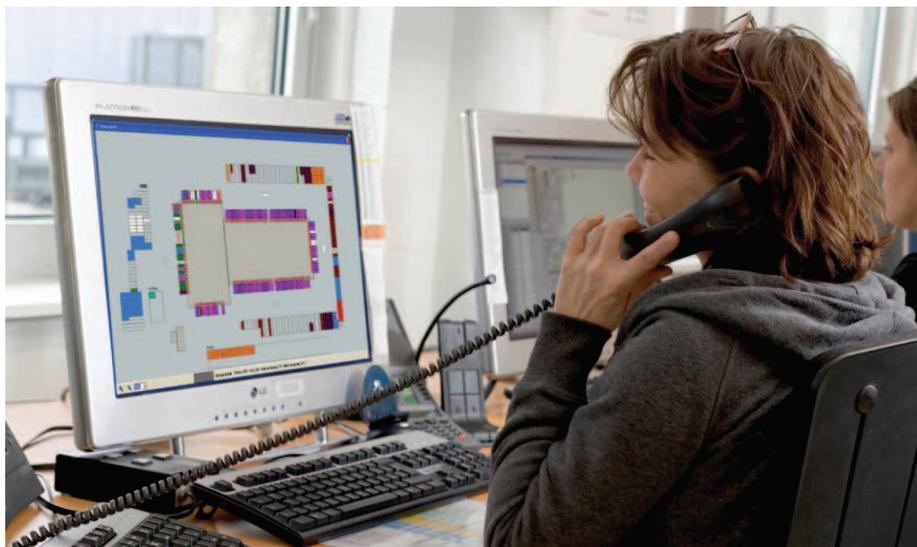
The yard dispatcher is relieved of routine-tasks and can concentrate on driving productivity

The scenario assumes adverse conditions for both companies: heavy snow in mid-November has led to the closure of major motorways throughout Germany, keeping a vast number of trucks on the road overnight. All these vehicles are now simultaneously approaching the yards and there is the additional problem of a number of unloading bays malfunctioning due to freezing conditions at both sites.

Looking ahead The yard manager at Gold Ltd is instantly informed about the new estimated arrival time of the delayed trucks. Via the online-interface between the yard management software and transport planning system, she is up-to-date on all transport-related matters. Having all relevant loading data available at a glance, she is able to prepare for the arrival of the vehicles in due time.

Meanwhile at Silver Ltd the yard dispatcher is eagerly awaiting the arrival of the delayed trucks, being informed by one of the drivers via mobile phone. To be able to handle that number of vehicles arriving at the same time, he had to ask his colleague to come in earlier and make arrangements for the sorting centre staff to work double shifts.

Long awaited – fast processed Based on the pre-notified loading data, truck arrival can be handled very swiftly at Gold Ltd. Because of the automated gate process, the check-in procedure for each truck takes only a minute. Number plates of vehicles and driver identification that can be recorded electronically – by RFID-chips, barcodes, etc – permit the identification of already announced shipments. Trucks with express parcels are automatically prioritised by the software to ensure that all customer service agreements are met. In the meantime the yard manager can focus her attention on scheduling an appointment

Automated gate processes using RFID-tags enables fast truck clearance

with the technicians to repair the malfunctioning loading bays.

At Silver Ltd the gate process is team-work. While one person is standing in the cold outside, ticking off container IDs on his clipboard, his colleague enters the arrival times into a computer spreadsheet. Even though both are working very fast, trucks are queuing outside the premises, already creating a traffic jam. In the event of lost freight papers, the oral statement of the truck driver is sometimes the only indication of the container content, making it hard for the gate staff to identify priority shipments over regular containers.

Optimised allocation Taking into account all relevant loading data as well as possible resource constraints, such as loading bay availability, unloading equipment at bay, the yard management system's advanced optimisation algorithms determines the best obtainable unloading bay upon arrival at Gold Ltd. Consequently the vehicle is sent direct and without any delay to the unloading bay, where sorting centre staff are informed about its arrival via monitors inside the hall. As soon as the transport enters the premises the vehicle and its containers are automatically visualised in the yard management system. Provided with real-time information of all yard movements, the dispatcher profits from full transparency at all times, enabling her to detect possible problems immediately and solve them promptly.

The allocation of unloading bays at Silver Ltd is done on a first-in, first-out

basis. The trucks that arrive early are sent to the unloading bays first, regardless of their actual shipment. Since the yard dispatcher is constantly interrupted by his colleagues via voice radio and does not have complete transparency over the current status of all unloading bays, he orders two shunters to take different containers to the same bay, causing a delay in processing.

Speedy unloading procedures With the help of mobile terminals, sorting staff at Gold Ltd collect relevant loading information (content, fill rate, seal number, etc), which is then linked to the respective

transport number so that the information can be traced afterwards. Without the need to manually check and write down loading information, the unloading process is accelerated and the already delayed shipments can be sent on to the sorting plant swiftly. Due to its interface to the sorting plant, the yard management system displays relevant loading information on the monitors inside the centre – for example the content (e.g. express parcels) as well as the number of shipments still on the sorter. In this way the sorting centre employee can easily see how many items are still approaching and take appropriate measures to ensure a fast loading process.

At Silver Ltd the usually well-coordinated unloading procedure is disrupted by the difficult conditions. Since there is only limited information flow between sorting centre staff and the yard dispatcher, the dispatcher is not aware of another unloading bay malfunctioning and sends a container with priority parcels there. In addition some employees are sent to a loading bay not equipped with telescope conveyors to unload a container with loose parcels that was sent there by mistake. Since it would take much longer to unload such a container without the necessary unloading equipment, the foreman calls the yard dispatcher to move this container to a suitable unloading bay. While some employees still struggle with

Complete transparency with embedded geographical hub overview

**Integration of sorting centre procedures via mobile RDT-devices**

SyncroTESS

SyncroTESS is Inform's software solution for the optimum flow of goods in distribution centres. The system optimises the handling of loading units and also the dispatching of trucks and railcars at parcel sorting centres, in-company reloading points and goods distribution centres. SyncroTESS plans and monitors the arrival and departure of goods by truck and rail. Moreover the system ensures the optimum distribution of all transport units such as containers, swap bodies and semi-trailers. In addition the software manages all the storage positions for the transport units within the terminal. In this manner the optimum use of all the resources necessary for the handling of goods is guaranteed. SyncroTESS ensures the shortest routes, the minimum number of empty loads and punctual handling of all transport orders.

the unloading process, the first parcels are ready to be loaded into the outgoing containers. Here again team work and organisation skills are necessary to manage this as quickly as possible.

Smart moves As soon as loading is completed, the yard management system at Gold Ltd automatically creates a transport order for a shunting vehicle to take the loaded container to a storing position. The order is sent to a shunting vehicle in real time and instantly displayed on its data radio device. Recognising the practical constraints involved (time window, available resources, etc), the yard management system assigns this order to the best possible vehicle for the given circumstances. On confirmation of container collection, the system generates a new transport order to take an empty container to the loading bay so that the sortation process does not come to a halt. Using these automatic mechanisms, the yard dispatcher is released from complex decisions and needs to intervene only when obstacles occur.

Having finished loading five containers, the foreman inside the sorting centre at Silver Ltd calls the yard dispatcher to remove the loaded containers and replace them with empty ones. Following this call, the dispatcher immediately informs his shunting personnel about the transport orders using voice radio. The drivers acknowledge orally and drive to the respective loading bay to collect the container. After confirmation of order completion, the dispatcher manually changes the container's position in his spreadsheet.

Quick way out The truck drivers at Gold Ltd are patiently waiting in the warm waiting room, sometimes interrupting the soccer broadcast by glancing at the information display, which signals them if their containers are ready to be picked up. As soon as they are cleared for entry they will drive through the gates to receive the exact location of their container. Having collected the container, the driver exits the premises, receiving his freight papers on the way out – with the whole process taking less than 30 minutes. Even though it has been a challenging day for everyone, the yard dispatcher can leave her workplace

knowing that all customers will receive their parcels in due time.

At Silver Ltd some of the truck drivers are so eager to get on the road that they pull up to the gate to see if their consignments are ready to be picked up, thereby blocking the narrow gate passage. The gate employee does his best to check with the yard dispatcher whether the containers are ready to be picked up. At the same time he has to deal with annoyed drivers, who have been circling the hub premises in search of their containers, which cannot be found at the designated storage position. With much delay and
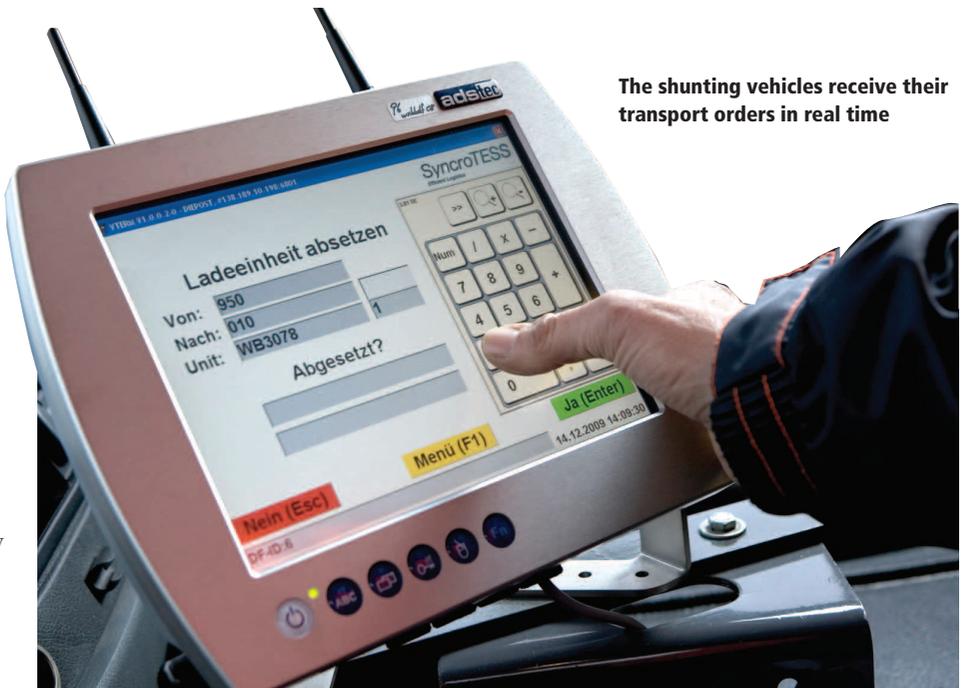
The shunting vehicles receive their transport orders in real time

maybe even some misrouted containers, all the trucks have been successfully processed after a very exhausting shift for everyone involved.

On the pulse of operations As demonstrated by these scenarios, intelligent yard management software enables the yard dispatcher to be always on the pulse of operations. Moreover employees at all levels benefit:

End user
• Relief from routine tasks;
• Full process control due to complete transparency in real time;
• Process reliability for every user;
• Optimised control of inbound and outbound vehicles in the hub;
• Optimised use of resources;
• Minimisation of loading bay idle-time.

Parcel centre management
• Fully transparent hub logistics operations;
• Savings with regard to mobile and immobile resources;
• Provision of process information and relevant KPIs;
• Identification of possible process enhancements.

Company executives
• Highly efficient value chain;
• Meeting the client's requirements even in the most adverse conditions;
• Obtaining new customers due to an exceptional ability to handle pitfalls;
• Initiation of growth without the necessity for substantial investment in new resources;
• Elimination of a major risk factor for the entire supply chain.

Accelerate the heartbeat These examples show that the yard of a parcel centre determines the heartbeat of the entire network. Treating this element as the network's poor relation inevitably endangers supply chain efficiency and service level agreements. Postal operators should understand that relevant KPI can be greatly improved by optimising yard operations (sorting process, yard management and distribution network), closely linking all relevant stakeholders. Integrated, intelligent yard management works in unison with upstream and downstream systems, creating a highly efficient supply chain. For postal companies this translates into higher profitability, more cost-efficient operations and a competitive advantage.

Approved tools are available to access the full potential of yard management and exploit this untapped potential of the supply chain. Management of postal companies must now become active and implement an appropriate software solution to secure their network's efficiency, meet their customers' requirements even under adverse conditions and constantly maintain attractiveness for potential customers. ■

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