



# NAVIGATING THE LOGISTICS LANDSCAPE

**Reiner Bachthaler, Axians IAS, discusses the next step in logistics for the bulk material industry: tailored software and mobile apps for enhanced efficiency.**

**I**n the context of the bulk material industry, where complex supply chains underpin operational success, the optimisation of logistics workflows emerges as a paramount consideration. As the industry faces challenges spanning inventory management, transport coordination, and real-time communication, the integration of advanced technologies has become imperative. This article delves into an extensive exploration of how to design a comprehensive toolkit for the nuanced demands of different roles in the logistics workflow like truck drivers or dispatchers, with a tailored combination of desktop software and mobile applications.

## Challenges and demands

The traditional practices of manual processes, paper-based documentation, and limited adoption of desktop software have characterised logistics within the bulk material sector. However, the current landscape demands a more sophisticated approach, combining a blend of desktop software and mobile applications. This integration is crucial for solving the industry's persistent challenges:

- ▶ **Paperless workflow:** The industry's transition towards sustainability necessitates the abandonment of paper-based workflows in favour of digital alternatives.
- ▶ **Transparency:** Real-time visibility across the logistics chain is critical for timely decision-making and responsiveness to unforeseen disruptions.
- ▶ **Data consistency:** Ensuring coherence of data across all stages of the logistics process is essential to prevent errors and inefficiencies.
- ▶ **Efficiency gains:** Reducing manual interventions and streamlining processes can result in significant time and cost savings.
- ▶ **Acceleration of processes:** Timeliness is paramount in logistics; tools that speed up processing are invaluable.
- ▶ **Skill shortage:** With skilled logistics professionals in short supply, technology must bridge the gap by enhancing efficiency and reducing the need for extensive expertise.

## Strategic utilisation of technology: dispelling 'one-size-fits-all' notions

As the industry contemplates the role of mobile apps, it is imperative to move beyond

a blanket approach. Rather, a nuanced differentiation and selection of tools suited to specific use cases and roles is crucial. Here are a few illustrative examples:

### Ordering

Ordering processes can benefit from both desktop software and mobile apps, depending on the user role and environment. A site manager at a construction site needs a fast and mobile solution to order material flexibly with just a few clicks. This is a typical application for mobile apps, that can offer user-friendly interfaces, ensuring ease of use and intuitive navigation. While desktop software might be more suitable for roles requiring comprehensive data access, like a purchaser working in an office environment.

### Dispatching and central order planning

For dispatching and central order planning, desktop-based software stands as the more pragmatic choice. The complexity of data handling for this use case requires the capabilities of desktop systems. While technology can aid these processes, direct communication through telephone remains vital for addressing nuanced concerns.

## Unveiling complexities: handling delivery documents

Managing delivery documents is a complex task in the bulk material logistics industry. This process involves various stakeholders; including weighers; truck drivers; recipients (e.g. mixing plants or construction sites); and administrative units in producers, carriers, and customers.

**Order Planning**

**Plan Order**

Created at May 16, 2023, 10:20:20 AM Last modified at May 16, 2023, 10:22:40 AM

**Order**  
Order no.: 14

**Customer**  
Customer no.: X0000001  
Customer name: American Stone LTD

**Receiver**  
Receiver no.: X0000110  
Receiver name: Axians IAS

**Order position: 1**  
Material: EN 197 Type2 PAC-cement A 223356  
Scheduled delivery date: May 17, 2023, 2:00:00 PM  
Material source: Werk | Plant 1  
Order quantity (81) of 81 TO (Order quantity)  
Transport price (€): 80  
Vehicle type: 5-Achs-Sattelkipper | 5-axe tipper trailer

Dispo position: 1  
Material quantity: 81  
Hauler: IAS Demo Carrier  
Alternative transport price (€): 0  
Delivery remark: An Silo 5  
Auto confirm

**Order position: 2**  
Material: EN 197 Type1 Portland A 223347  
Scheduled delivery date: May 17, 2023, 3:00:00 PM  
Material source: Werk | Plant 1  
Order quantity (54) of 54 PS (Order quantity)  
Transport price (€): 80  
Vehicle type: 5-Achs-Sattelkipper | 5-axe tipper trailer

Dispo position: 1  
Material quantity: 54  
Hauler: IAS Demo Carrier  
Alternative transport price (€): 0  
Delivery remark:  
Auto confirm

**Order position: 3**  
Material: CEM I/A-LL 52,5 R  
Scheduled delivery date: May 17, 2023, 4:00:00 PM  
Material source: Werk | Plant 1  
Order quantity (20) of 20 TO (Order quantity)  
Transport price (€): 120  
Vehicle type: 4-Achs-Kipper | 4-axe tipper

Dispo position: 1  
Material quantity: 20  
Hauler: IAS Demo Carrier  
Alternative transport price (€): 0  
Delivery remark:  
Auto confirm

Place Order Plan

Figure 1. VAS Cloud Logistics: central order planning.

## Tapping into transformation: redefining delivery processes

At present, semi-digital or even paper-based workflows dominate the delivery process. A truck driver's journey involves entry weighing, bill of loading creation, loading, exit weighing, delivery note creation, manual signatures, and the distribution of these notes across diverse departments. This intricate process underscores the need for optimisation.

## Transformation at hand: tools in practice for delivery management

Preplanning of orders is crucial for an efficient delivery workflow, best suited for desktop apps due to the information required (though optional, it enhances predictability for producers and drivers).

When a freight order is preplanned, the most comfortable way of providing the related info to the truck driver is via a mobile app that can be used on a smartphone. A perfect example is the Axians' Ticket App (Figure 2). The concept is well proven in many plants of leading material suppliers, showing the ability of mobile apps to increase the efficiency of the logistic workflow in the cement and other bulk goods industries.

At login, the app shows a complete list of all dedicated freight orders at a glance. Upon arrival at the plant for loading, the driver selects the freight order in the mobile app and scans the QR code at the entry terminal. There is no need to create a

bill of loading. The app could even guide the driver to the correct loading station. Depending on plant automation, scanning the QR code may initiate automated loading.

After loading and weighing, all delivery details are automatically stored in the driver's mobile app, optionally generating a PDF document as well.

## Beyond the plant: simplify shipment and unloading with mobile driver apps

After finishing the loading process at the plant, the mobile driver app is also valuable for managing shipments and to recipients. When connected to telematics systems, it provides tracking for customers and dispatchers. The driver has access to all relevant information for the target location. At the recipient, the app can assign time stamps to dedicated process steps, thereby creating an electronic shipment record (e.g. waiting 20 min. for unloading caused by customer). Receiver confirmation is significantly facilitated as well through the app's signature screen.

In a traditional paper-based workflow, the truck driver collects the signed delivery notes and at day's end hands out these sheets to the accounting department, thereby requiring manual data entry in the accounting system. When the mobile app of the truck driver is online connected to the logistics workflow system of the supplier, all shipment data can be collected automatically for further



Figure 2. Ticket App: order selection and processes at the plant.

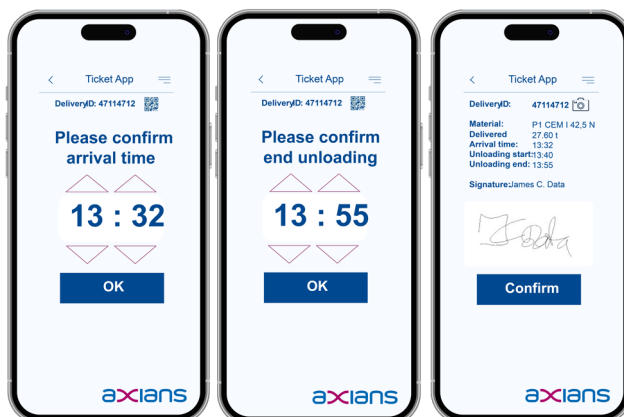


Figure 3. Ticket App: Unloading proof of delivery.

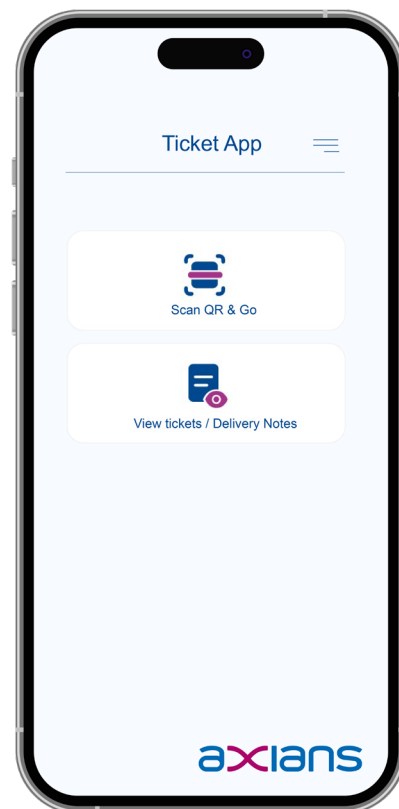


Figure 4. Ticket App: Order selection with QR Scan&Go (no login required).



controlling and invoicing purposes with no need for manual data entry.

This example highlights the flexibility achieved through intelligent use of desktop software and mobile apps for various roles. In situations where most freight orders are unplanned and drivers arrive at the plant without prior notice, a mobile app still proves beneficial. The Ticket App from Axians enables easy freight order creation, predefining loading and shipment details.

A variation is when a truck driver should be completely disburdened from any login processes or selection from a list or from the task of creating of freight orders.

If a central logistic system or yard management system like Axians VAS Yard Management generates a freight order QR code, scanning it with the driver app provides all necessary info for the driver. It can be that easy.

This also shows the flexibility of the delivery workflow, that can be achieved with an intelligent combination of desktop software in the administration and mobile apps for roles like customers (purchaser) or truck drivers.

### **Summing up: a shift in efficiency**

In conclusion, while mobile apps are not a cure-all, they significantly enhance specific logistics tasks like ordering, delivery, and shipment processes. Integration across workflow areas, such as Axians' central logistic workflow (VAS Cloud

Logistics) aligned with a well proven logistic system at the plant (VAS Yard Management) and a powerful mobile app, is the key.

By embracing this approach, the bulk material industry can enhance efficiency, simplify processes, and adapt to the evolving landscape.

In conclusion, while mobile apps cannot solve every challenge, they significantly enhance specific logistics tasks like ordering, delivery, and shipment processes.

Integration across workflow areas is the key – this means online integration of all involved roles and data such as Axians' central logistic workflow (VAS Cloud Logistics) aligned with a well proven logistic system at the plant (VAS Yard Management) and powerful mobile apps.

By embracing this approach, the bulk material industry can enhance efficiency, simplify processes, and adapt to the evolving landscape with confidence and trust to tackle current and future challenges. ■

### **About the author**

Reiner Bachthaler has his roots in industrial software-based automisation projects and a long-term experience in software product management. He is a Senior Product Manager at Axians Industrial Applications GmbH.