HSSMI

SUCCESS STORY:

BUILDING A DIGITAL PLATFORM TO SOLVE INBOUND LOGISTICS CHALLENGES

INTRODUCTION

HSSMI worked with a UK commercial OEM, specialised in electric vehicle manufacture, that was looking to launch a new product. The manufacture of the new product, alongside existing ones, created more complex processes and logistical challenges in managing over 200 suppliers across the UK and Europe. As the OEM aims to transition towards net-zero for manufacturing and supply chain operations, it was imperative to solve these challenges by streamlining operations. Through collaborative analysis of relevant processes, HSSMI was able to design a bespoke and customisable digital solution - the Timeboard System.

In particular, this approach helped the OEM tackle challenges related to inbound process standardisation and control, visibility and traceability of stock, and delivery planning and scheduling.

THE CHALLENGE

The key challenges were:

- **Long lorry delivery queues**, with an average of 185 delivery vehicles per week, the lack of visibility of inbound deliveries and poor delivery planning made it difficult to plan the right level of resources to process delivery lorries. Consequently, there were significant delays with processing delivery lorries onsite. Initial investigations revealed that up to 75% of the delivery lorry time on site was classified as non-value added i.e. waiting in a queue to be processed.

- **Logistic costs** - with the high volume of unplanned delivery vehicles arriving weekly and the resource constraints, on-site delays were inevitable. This issue was exacerbated by the lack of visibility of daily deliveries, making it increasingly difficult to plan the right level of resources required to manage the workload. Overall, an average charge of £90 per delivery (~£2600 monthly) was incurred in charges due to on-site delays and redeliveries.

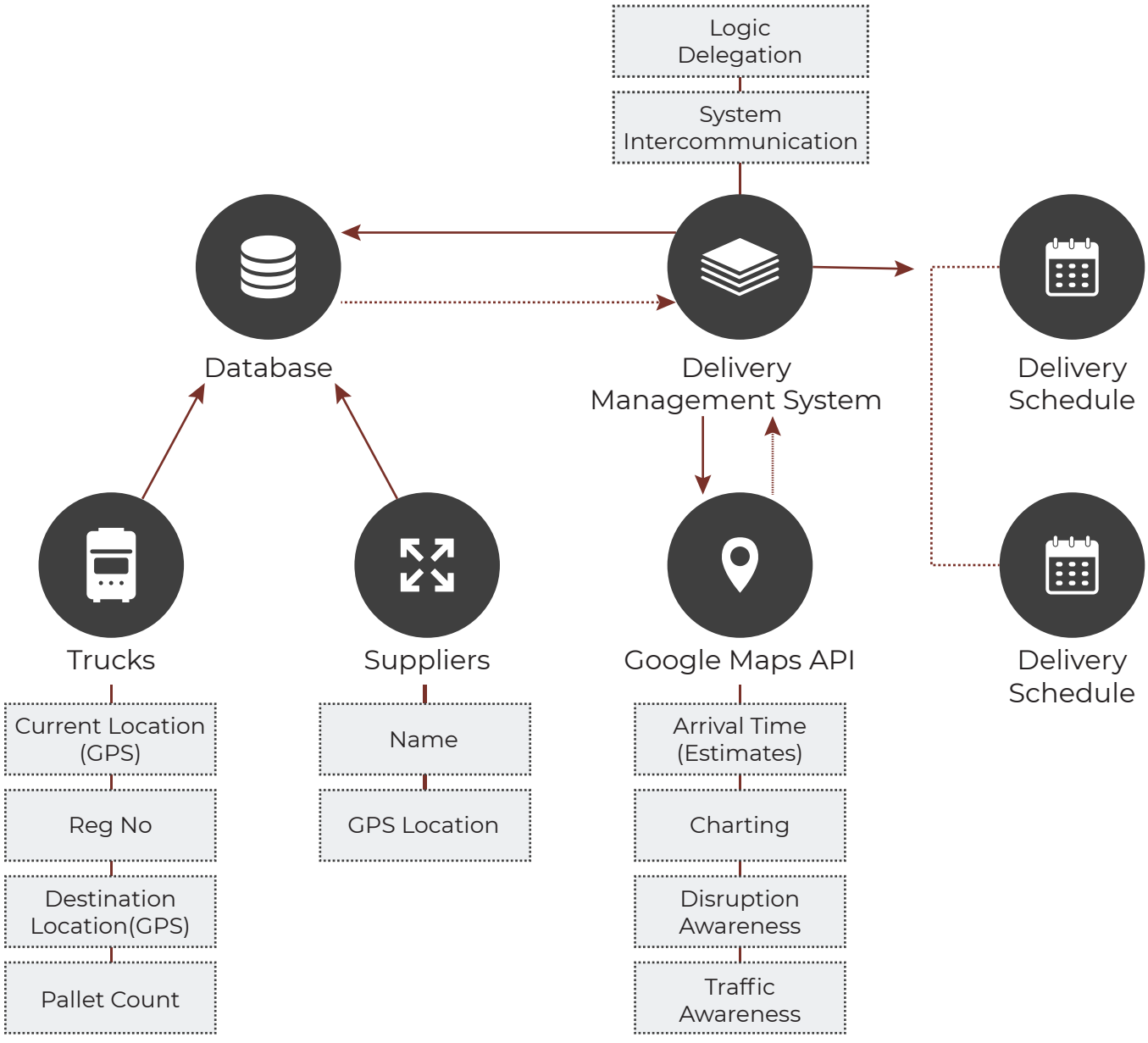
- **Receipting Issues** - deliveries were frequently arriving without correct paperwork, or no paperwork at all, resulting in misplaced parts, labour intensive communication efforts to recover paperwork, leading to multiple invoices in query. Approximately 70% of invoices received went into query with a maximum of up to 3500 invoices currently pending resolution on average monthly.

THE APPROACH

HSSMI worked collaboratively with the OEM key stakeholders to analyse the challenges. This effort led to the development of a Timeboard System that provides a platform for tracking and improving efficiency in inbound logistics operations. The platform allows for collaboration amongst supply chain members with live data that allows real-time updates to be visualised so the supply chain can react to updated situations. The built-in intelligence helps to coordinate and streamline deliveries and reduce the costs incurred due to delays.

This tool is unique in that it is easily customisable and is deployed in modules to allow users to pick and choose different functionalities based on their distinctive requirements. As shown in the image below, the Timeboard system provides information on multiple points along the delivery schedule. The data nodes i.e. suppliers, truck locations and schedules, are integrated by the internal logic with customised views and dashboards presented by clear user interface. Additionally, the Timeboard is able to integrate with existing systems using Electronic Data Interchange (EDI) to capture updates.

OVERVIEW OF THE DELIVERY MANAGEMENT SYSTEM



The tool has three main functionalities that directly addressed the issues identified in the OEM's supply chain and logistics operations.

- **Data visualisation** - enables Goods-In staff to visualise daily deliveries with real-time updates to the Estimated Time of Arrival (ETA), based on events captured via GPS or push notifications from Enterprise Resource Planning (ERP) systems.

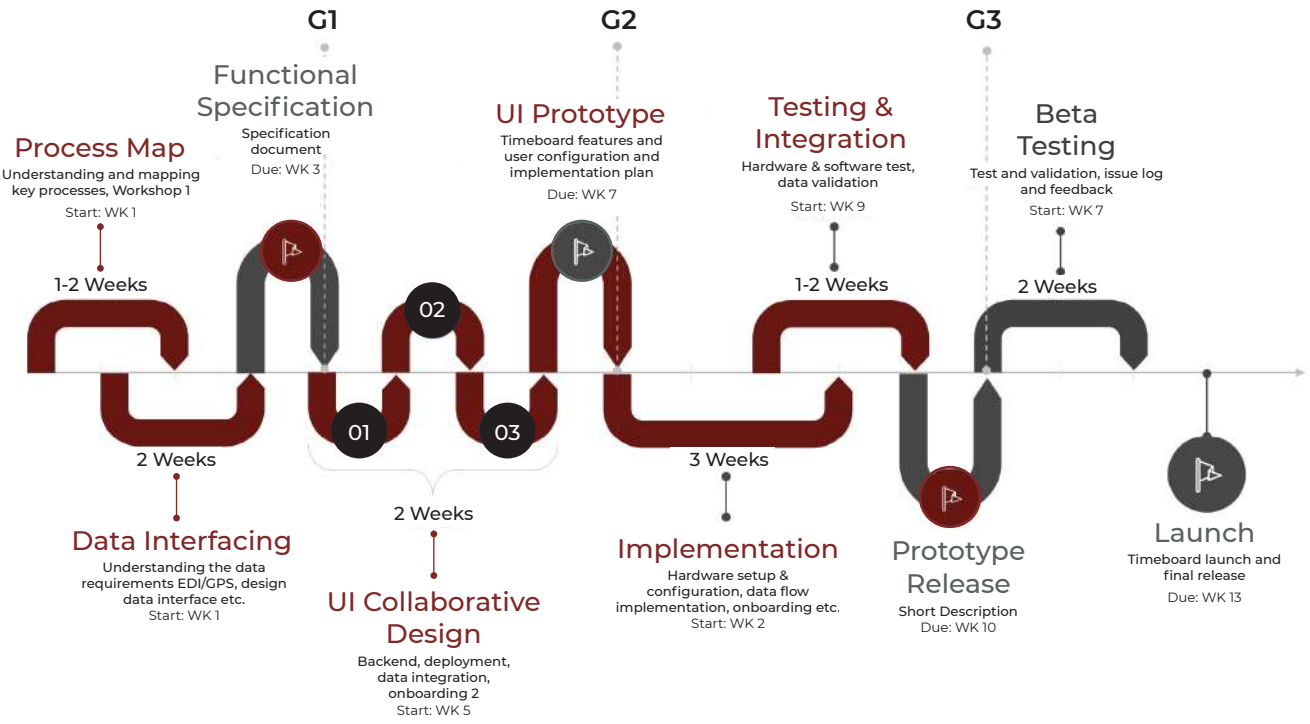
- **Collaborative data hub** - enables availability of digital delivery paperwork on delivery. This functionality contributes to the Right First Time and improves the efficiency of the Goods receipting process and invoices in query.

- **Digitalisation & KPI Dashboards** - eliminates manual data entry and enables reporting by consolidating data from multiple spreadsheets into interactive dashboards showing relevant KPIs e.g. monthly CO_2, transport cost per vehicle etc. This enabled the OEM to make data-driven decisions and drive continuous improvement operations.

The image below gives an overview of the delivery timeline for the Timeboard. Generally, the Timeboard System distinguishes itself from other off-the-shelf solutions in that the solution architecture is based on the customer's processes. The key advantage here is that the solution is able to directly meet the unique needs of the customer rather than a one-size-fits-all approach which is often expensive to adapt to different customers.

Additionally, the simple and modular nature of the design makes it effective in using modern technology to tackle real problems by aligning application directly to processes. The delivery timeline has three gateway nodes G1, G2 and G3 to allow for a collaborative design approach.

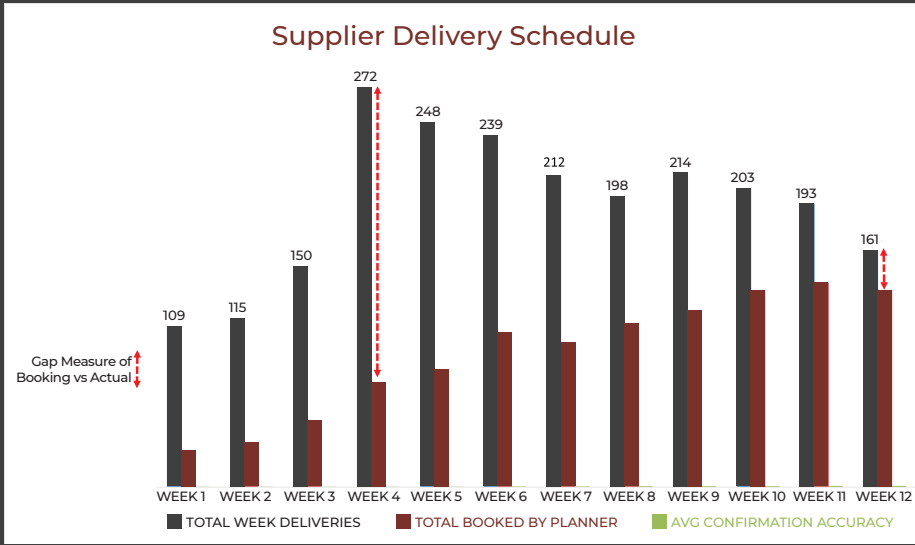
TIMEBOARD DELIVERY ROADMAP



THE RESULTS

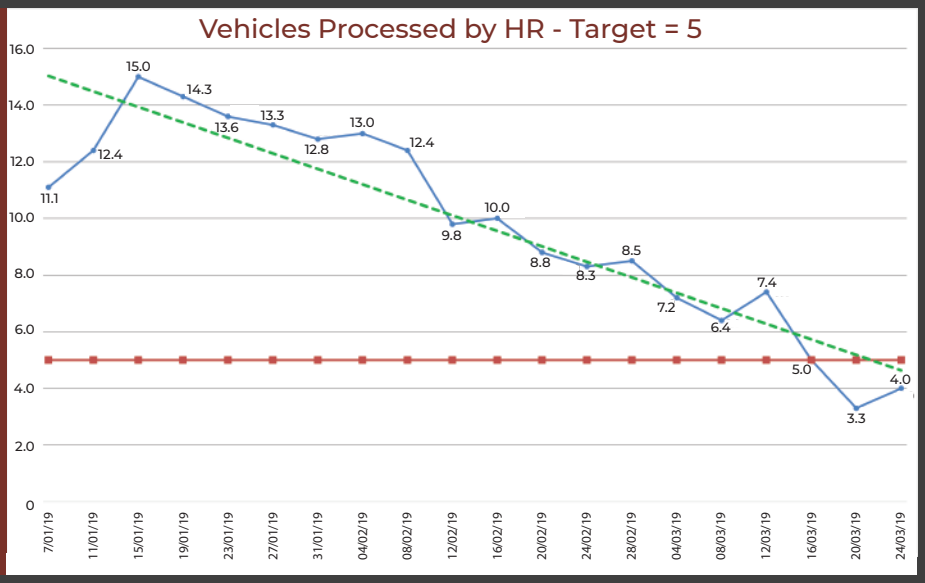
The implementation of the Timeboard led to three significant improvements:

- Visibility of incoming deliveries allowed better planning and utilisation of Goods-In resources and improved planning accuracy for delivery i.e. planned vs actual increased from 13% to 77% in the first 12 weeks.
- The delivery slot configurator allowed delivery to be planned according to the site capacity to reduce long queues with a reduction of up to 15% in the number of delivery vehicles per week due to improved scheduling and planning.
- The ability to provide visibility of incoming vehicles and electronic delivery documents through the digital platform increased the rate of First Time Through deliveries; up to 97% accuracy in delivery documents in the first 3 months.



This figure gives an overview of the actual deliveries versus the scheduled delivery. In the first 12 weeks the alignment improved from 272 total deliveries vs 71 booked to 161 total deliveries vs 134 booked.

This figure gives an overview of the number of vehicles arriving per hour. This decreased from a maximum of 15 vehicles/hr to 5 vehicles/hr in the first 12 weeks, reducing the number of queues and saving delay charges.



Although this project focused on the automotive industry, the Timeboard System can be used to manage logistics in any supply chain. Optimising logistics can enable companies to take vital steps in moving towards net-zero and negating their environmental impact.

HSSMI is currently refining the Timeboard System and looking to establish links with interested businesses and stakeholders that could benefit from it. Joint research and development projects could help improve the Timeboard System by extending its functionality and developing solutions for other supply chain systems.