

Success Story in automotive

Rapid design and implementation of the new logistics concept for YASA's start-up factory in Bicester, UK

Customer: YASA Limited

Automotive supplier and global leader in axial flux motors

Project scope

Full scope concept design and implementation for logistics and production

YASA 

Engineering Revolution

A unique project approach across processes, IT and organization to enable quick scale-up

YASA Limited, a leader in the development of new-generation axial flux motors, faced a significant challenge as they prepared for the pre-series production for Mercedes-Benz AMG at their start-up factory in Bicester, UK.

After YASA was acquired by Mercedes-Benz in 2021, the new production facility was developed to build specific motors for testing and validation. Subsequently, it was agreed that YASA's site in Bicester should serve as a start-up factory for pre-series production, and so the output of production and logistics needed to be scaled up significantly in a short period of time.

To assess the initial situation and design a suitable solution to fit the requirements, YASA turned to 4flow, a long-time consulting partner of YASA's parent company Mercedes-Benz in supply chain management, logistics and production. Together with a small team of experts from YASA, 4flow quickly formulated the challenges at hand, creating baseline data to help determine the best solutions to carry forward and implement. The target was to ensure a successful start of production (SOP) with an entirely new logistics strategy and processes within three months.

The 4flow project approach for such a high-stakes endeavor followed three basic principles:

- 1. Designing a modular logistics concept consisting of short-term (manual) as well as mid- and long-term (automated) solutions**
- 2. Rapidly implementing manual solutions with agile fine-tuning during the rollout**
- 3. Implementing already available and robust IT functionalities in the short-term, and high effort, more time-consuming IT functionalities in the mid- to long-term**

Starting in mid-November 2023, a team of 4flow logistics and digitization experts developed a comprehensive logistics concept tailored to YASA's unique needs. The concept included short-, mid- and long-term elements, including the fit out and opening of a new off-site warehouse, the onboarding and training of new staff, the introduction of new standard operating processes, and the integration of new IT functionalities into the existing ERP system. For all these elements, implementation dates and appropriate milestones were defined.

Rapid implementation to meet the SOP

To prepare for the SOP in March 2024, 4flow conducted a tender for warehouse infrastructure immediately after starting the project. The tendering, procurement and installation of all equipment was completed in just four weeks.

Subsequently, a Plan for Every Part (PFEP) was created to better understand gaps in the supply chain. Due to quality requirements of pre-series production, a kitting material flow process was implemented for parts with high variance or value, and the Kanban method was used for consumption material. The material staging concept for the sub- and final

assembly lines needed to be highly flexible, as the production layout continued to change with the addition of new machines and production processes until the SOP.

In addition, the YASA logistics operations team needed to be expanded significantly to handle the planned ramp-up volume. Based on the newly designed processes, 4flow advised YASA on the necessary resource requirements using proven, industry-standard resource modelling techniques.

Furthermore, the new team members needed to be trained in the new processes. Having designed the new processes from the ground up, the project team was able to transfer the necessary knowledge on all levels - from shopfloor to management roles. Using end-to-end documentation and in-depth training materials, new employees were trained on-site and supported during operations during go-live and optimization.



End-to-end inventory transparency and full parts traceability

After a successful SOP and the subsequent ramp-up, the focus of the project turned towards realizing the mid- to long-term concept elements, mostly composed

of enhancements to the existing ERP systems to improve efficiency. For the top management of YASA, the main goal of new IT enhancements was to achieve end-to-end inventory transparency and to attain full parts traceability.

Together with YASA IT and business experts, the 4flow team followed an agile methodology to specify and refine user stories, test newly developed IT functionalities, identify and eliminate defects, and perform user acceptance training. Due to the importance of the IT enhancements, 4flow also provided frequent progress reports to YASA's top management and prepared and facilitated important management decisions through gateway and steer-co meetings.

In line with the agile IT development approach, newly developed functionalities were rolled out to the shop floor separately for each production line, to incorporate lessons learned from previous rollouts.

Overall, the joint project team was successful in reaching all milestones across a diverse and complex project. 4flow provided consulting support in a truly full-scope logistics and production project, spanning from concept design to realization. The main success factors for this project include on-site presence by the 4flow project team, the development of flexible and modular concepts as well as an agile IT project management and rollout approach. In addition, securing YASA management support from the project start and supporting the change process across all levels of the organization were important for the project's success.

Results



New logistics concept developed and implemented **within three months** before SOP



End-to-end inventory transparency and full parts traceability achieved using agile IT development approach



Production ramp-up targets reached, increase of output by tenfold



Important management decisions regarding **concept design, SOP, ramp-up and optimizations** facilitated

About 4flow

4flow is a leading provider of supply chain consulting, software and fourth-party logistics (4PL) services. With more than 1300 team members, 4flow is a global partner for its customers at more than 25 locations in Europe, Asia, North America, and South America. 4flow completes more than 300 projects a year in cooperation with customers on 5 continents, in more than 40 different countries and regions. 4flow is headquartered in Berlin, Germany.

20+

offices in Europe, Asia and the Americas

1300+

team members globally

400+

customers globally

300+

projects annually around the world

