

Success Story  
in Consumer Goods  
Sustainable and  
efficient logistics into  
the future at the BSH  
Appliance Park



# 4flow develops traffic concept for BSH manufacturing park in China

How many trucks are needed when several tens of thousands of home appliances are produced in one day? How can well over a thousand tractor-trailers arrive at and depart from manufacturing facilities without causing traffic disruptions, supply bottlenecks or production standstills? The answers to these questions are provided in a logistics concept developed by BSH Home Appliances (BSH) and 4flow for BSH's Home Appliance Park in Chuzhou, China. BSH now has a strategic master plan for smooth transportation logistics up to 2025 or until the manufacturing park reaches maximum capacity.

## Park with 5 plants and 3 distribution centers

With more than 53,000 employees and 42 plants in about 13 countries, BSH is a leading global distributor of quality home appliances. To provide Chinese consumers with home appliances tailored to their needs, BSH plans to significantly increase its current production capacity by 2025. As the existing locations were not set up for such substantial growth, BSH decided in early 2015 to expand its Home Appliance Park in Chuzhou. By 2025, 3 new distribution centers and 5 more plants, each with their own inbound warehouses, will be built. At the new manufacturing park's refrigerator plant alone, more than half a million units were produced in 2015.

## Seeking a partner with German-Chinese logistics expertise

Considering the rising production volume, BSH selected 4flow to create a concept for its Home Appliance Park that would ensure optimal alignment of the movement of materials and finished goods. 4flow's excellent understanding of the Chinese market, comprehensive supply chain know-how for high production volumes, and global organization was the right match for BSH. With its German-Chinese team in Shanghai, 4flow provided optimal support for its client. The 4flow team in Munich, Germany, was also able to coordinate with BSH project managers headquartered in Munich. "4flow knew exactly how to manage the large and diverse project team and the stakeholders," Michael Fuchs, Director of Projects at BSH, said.

## A scalable traffic concept

4flow first collected an extensive amount of data to forecast the future flow of trucks and analyzed it - including everything from order quantities and delivery cycles to delivery quantities and intervals and even the dimensions of materials and finished goods. The findings showed that roughly more than a thousand trucks a day will be required until 2025 to handle inbound and outbound transportation. Taking not only quantitative factors into account, 4flow also distinguished between just-in-time shipments and packaging shipments, inbound and outbound shipments to plants, and inbound and outbound shipments at the distribution centers. Other factors included peak times, total unloading times, and peak production times, common during peaks in demand. Traffic between plants, pedestrian traffic, and the amount of trucks for waste disposal were then taken into account as well. Based on these analyses, 4 different scenarios were identified, which differed according to traffic flow within the park, one-way and two-way traffic, parking layouts, and the number and position of loading bays and entrances to the park.

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Michael Fuchs, Director of Projects at BSH

### Customer

- > BSH Home Appliances

### Consumer goods

- > 53,000+ employees worldwide
- > 42 production facilities in 13 countries

### Project scope

- > Create a traffic concept for a planned appliance park in Chuzhou, China, while taking future production capacity and logistics needs into account.

### Results

- > Flexible long-term planning owing to future-ready traffic concept
- > Solutions created to identify and prevent possible weaknesses
- > Optimized processes and reduced wait times for loading and unloading trucks
- > Uncovered potential cost savings regarding equipment and packaging

Potential bottlenecks on the roads, at gates, loading bays and distribution centers were identified using a specially developed software tool. With the optimization of loading processes and the implementation of time slot systems to prevent traffic jams and wait time at the bays, 4flow prevented possible weaknesses. Setting up variable times in Receiving enabled the reduction of incoming trucks per hour.

## Cost-efficient and sustainable solutions for growth at BSH

A concept geared toward sustainability accounts for BSH's anticipated growth until 2025, from a traffic volume perspective. For each stage of expansion at the park, the concept includes traffic volume forecasts and recommendations for action to ensure smooth traffic flows. "The traffic concept 4flow developed for BSH exceeded our expectations: Instead of the number of appliances planned for each year, 4flow looked at the maximum capacity of the park. This ensures the scalability of the traffic concept as the production volume rises," Michael Fuchs of BSH said.

As an alternative to new construction involving high investment, the plan opted for smart, less cost-intensive solutions. One example of this was the increasing need for more truck parking spaces at the distribution centers, which was improved by more efficient space utilization and shorter wait times. 4flow also identified cost-saving potential in loading and unloading processes and the choice of equipment. By using improved packaging and the right trucks, unloading is now more efficient. "Identifying cost-saving potential and developing creative alternatives along with flexible, long-term planning will help ensure our logistics remains competitive and efficient right into the future," Michael Fuchs said.

## About 4flow

4flow is a leading provider of supply chain consulting, software and fourth-party logistics (4PL) services. With more than 1000 team members, 4flow is a global partner for its customers at more than 20 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. 4flow is headquartered in Berlin, Germany.