Case Study

Shell Chemicals Europe and Bertschi AG

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THE PLATFORM

If transport continues to grow at the same rate as the economy, this will become both an economic and an environmental problem. Increasingly congested roads are as much a disadvantage to European business as they are to society at large. The bestlog project, initiated by the European Commission, will establish an exchange platform for the improvement of supply chain management practice across Europe.

OBJECTIVES

- To improve logistics practice and logistics education
- To raise the overall standards of practice across Europe
- To set high standards for logistics education and practice
- To create economic growth and job opportunities as a result
- Achieve a better match between EC policy and business decisions

SOLUTIONS & ACTIVITIES

- European platform for sharing logistics best practice
- Online directory of logistics best practice case studies
- Online directory of European logistics education opportunities
- Benchmarking online for European companies
- European conferences to share logistics best practice
- Web forum, award directory, media directory, and more
- Industry workshops
PROBLEM DESCRIPTION

Generally, Shell was facing the problem of insufficient storage capacity for the chemical substances produced at its site in Wilton (Northeast England). The increasing number of specifications in the chemicals portfolio and the constantly growing volume of produced goods were the main drivers for the redesign.

Due to the unpredictable order patterns, Shell was forced to hold buffer stocks in off-site facilities, based on medium/long-term contracts. Prior to the solution presented later in this case, 75 percent of the finished goods produced in Wilton were stored off-site. This created high fixed costs for Shell which were not in sync with the company’s day-to-day business.

Another factor adding complexity to the challenges Shell faced was the requirement that the composition of each batch be certified. The many reloadings during a product’s journey to the final customer and the required certification made it difficult for Shell to respond to short-notice orders. Furthermore, the necessity to clean each tank before filling it with another substance increased lead times for product deliveries as well as the costs for Shell.

In order to overcome those challenges, Shell faced the decision to either expand the storage capacities in Wilton or to implement a new concept in order to solve the aforementioned problem.

The case of Bertschi AG and Shell illustrates how the two companies successfully redesigned the supply network of Shell’s petrochemical plant in Wilton/UK. Prior to the beginning of this vertical collaboration, Shell was facing issues regarding the storage of finished products. Due to the number of specifications for Shell’s chemical products and the requirement to store them separately, the company faced fixed costs which were excessive for the company’s day-to-day needs. Jointly, Bertschi and Shell developed a new concept, allowing both companies to share the risks while generating individual benefits. By creating a flexible stock system for the chemical products, Bertschi was able to offer effective services, while Shell profited from greater flexibility and shorter response times to customer orders.

COMPANY FACTS

- Company name: Bertschi AG
- Location: Dürrenäsch, Switzerland
- Industry/sector: Logistics Service Provider (LSP)
- Company size: Medium
- Employees: 1,650
- Turnover: € 450 million (2007)

Services/products offered:
LSP mainly for chemical substances

Further case related logistics figures:
- 1,100 towing vehicles
- 1,250 trailers
- 13,000 shipping units
- 15 owned container terminals
THE SOLUTION

Basically, Shell had two main options to reduce complexity in their production and storage processes and therefore also reduce the lead times to the final customer. They could either expand their storage capacity in Wilton or try out a new concept. Due to the high cost and limited flexibility of an increase in storage capacity, Shell decided to create a new concept together with a logistics service provider.

After receiving Shell’s request, Bertschi developed a clear approach towards the problems Shell was facing. The proposed concept envisioned the direct loading of the finished goods from the production tanks into tank containers 24/7. In order to make the operational processes more efficient, it was important that Bertschi’s concept should fill the chemicals produced by Shell into transportable tank containers and therefore permit effective mobile storage. Eventually, the tank containers are either delivered directly to the customer or stored according to the build-to-stock principle if there is no connection to a current customer order. To enable a quick response to short-notice customer orders, a safety stock of 28 transportable units is always maintained.

Despite this safety stock, the overall inventory was reduced by more than 35 percent. In order to further accelerate the loading process, Bertschi invested in the training of their drivers. They were trained to self-load their vehicles. This investment not only accelerated the loading process but also made the drivers more aware of problems occurring at the operational interface between the two companies. Furthermore, the self-loading of vehicles presented Bertschi with an opportunity to gain Shell’s trust, as their drivers would take on another important function in Shell’s operations.

In order to implement its concept, Bertschi had to acquire a new site. And in order to respond quickly to short-notice orders and/or changes in Shell’s production plans, this site needed to be close to the Shell site in Wilton. Bertschi therefore decided to acquire a site in Teesside. To ensure smooth operations, this site had to meet all relevant health and safety standards as well as the legal stipulations of course. Since Bertschi had to invest several million Euros, it was essential to have the security of a long-term contract between the company and Shell.
The process aimed at increasing transport efficiency required Shell to standardize the size of its produced batches to 50-tons. This enabled Bertschi to improve its transport efficiency by loading two 25-ton tanks rather than splitting the orders into 23-ton loads. Despite the benefits of this strategy, Shell took a risk by standardizing the order weight for its customers.

Moreover, Bertschi contributed to increased transport efficiency by improving return loads within its tanker fleet. They collected raw materials from Shell’s plant in Stanlow (Northwest England). Whenever possible, these loads were compatible with the outgoing finished goods, thereby avoiding empty runs as well as expensive and time-consuming cleaning of tanks.

To ensure smooth implementation of the concepts described above, an employee from Bertschi was “embedded” within the Shell operation at Wilton while the site in Teeside was still under construction. This enabled Bertschi to gain insights into the operation run by its customer and to collect information on Shell customers and their specific delivery requirements.

The integration of the Bertschi employee also provided an opportunity to apply specific company knowledge rather than utilizing standard solutions. The “embedding” of a Bertschi employee and the insights gained into Shell’s operations demonstrate the highly collaborative and trustful relationship. This attitude was maintained throughout the further development of collaboration. For example, the partners chose to implement a communication concept which transcends not only company boundaries but also traditional hierarchical levels of management.

The result is that the teams in both organizations work together on an internal and external level. This ensures that operations are agile and responsive, resulting in the provision of the best possible service to the final customer. The personal interaction between the two companies is based on the “management of exception” concept, and information exchange therefore mainly takes place via an IT interface.

The IT system used by Shell enables the company to manage orders, production forecasts, sales forecasts and customer data.

The CHALLENGES section includes:

**Challenge 1 - Building trust** between the players: the most important requirement for the success of collaboration was the continuous building of trust between Shell and Bertschi. This process formed the basis for overcoming the challenges mentioned below.

**Challenge 2 - Information sharing:** the sharing of information such as sales data and production figures was one of the key success factors for cooperation between the two companies. Implementing an integrated IT system was essential in order for Shell and Bertschi to operate their day-to-day business processes efficiently.

**Challenge 3 - Knowing the customer:** prior to providing Shell with a tailor-made solution, the Swiss LSP had to find out about Shell’s requirements.

**Challenge 4 - Measuring the success of collaboration:** in order to convince Shell of the benefits of the solution and to identify improvement levers, it was essential to implement the right KPIs in order to measure the success of collaboration. To foster the trust-building process, the KPIs were chosen by Shell.
If an order is received at Shell, the information is transferred directly to Bertschi, where the order data is downloaded on the internal order processing system. Afterwards, the order is tagged with an internal number, which allows the order to be traced throughout Bertschi’s operation.

In conclusion, it can be stated that so far Bertschi has been able to convince Shell of the advantages of the new transportation concept. The expansion from one to twelve product specifications handled by Bertschi is a good indicator for this.

LESSONS LEARNED

- It is essential to have the ability to rapidly respond to changes in the customer's production plans
- Moreover, it is crucial to gain and maintain the customer’s trust in order to fully implement the business model

SUCCESS FACTORS

- Close cooperation across different levels as well as the creation of joint project teams are essential for the sustainable success of the company.
- Especially on the operational level, intensive communication is crucial in order to identify potential difficulties without delay and to overcome these difficulties.
- To ensure the success of collaboration, it is important to closely monitor operations, especially at the interface between the partners.
- If difficulties become apparent, it is important to not only rely on standard concepts used throughout the industry but also to exploit individual knowledge within the partner companies in order to provide tailor-made solutions.
- Despite the importance of communication within the project teams, the implementation of an intermateable IT system is equally important in order to ensure a smooth flow of information between the companies involved in the collaboration process.
- In order to “be on the same page” regarding the developments in the collaboration process, the definition of jointly agreed KPIs and fast reaction to changes in these KPIs is important.
- If the goalposts of the customer shift, the previously defined KPIs should be modified in order to maintain the provision of a tailor-made concept to the customer.

“We work as one business. Sharing KPIs is a key success for this operation. Bertschi and Shell operation at Wilton has been integrated to work as one team with joint objectives.”

Mr. Nick Brown, General Manager/Shell-Contract Manager
**THE BENEFITS**

The quantifiable benefits of the collaboration are indisputable. Quality control savings exceeded 50%. Inventory has been reduced by 35%, administrative overhead has been reduced by 50%. The venture has driven production capacity improvements, which has allowed better weight utilization in the loads delivered. Additional savings in supply chain costs were achieved through more efficient planning. Furthermore, the improved service level is perceived as an important benefit.

### Economic

- Due to the decrease in the amount of necessary decanting, quality control savings exceeded 50 percent.
- The direct filling of finished goods into transportable units led to a reduction in inventory, which has been reduced by 35 percent.
- Moreover, the number of required certifications was reduced, which led to a decrease in administrative overhead costs of 50 percent.
- The increase in efficiency with regard to the utilization of transportable units led to a reduction of more than 35 percent in supply chain costs.
- This increased efficiency and the ability to respond quicker to short-notice orders has improved the level of service to end-customers.
- The simplification of the filling and transportation process made higher plant capacity utilization possible.

### Environmental

- Preference for intermodal transport, increased amount per load and decreased total number of transports per year.
- Furthermore, greater use of intermodal transport led to a decrease in CO2 emissions.
- The number of tank cleaning operations was significantly reduced thanks to the new concept.

### Social

- The advanced training of Bertschi drivers during the implementation of the concept is one of the main social benefits that has been identified, as it contributed to the individual education of each driver.

**TRANSFERABILITY**

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<tr>
<th>Transferables</th>
<th>Limitations</th>
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<tbody>
<tr>
<td>Similar concepts have been implemented in collaboration with other large producers of chemical substances. Although this concept was developed especially for the chemical industry, the basic approaches could be transferred to other industries.</td>
<td>Since the concept was developed as a tailor-made solution by Bertschi for Shell, difficulties may appear when attempting to transfer every last detail of the approach. One reason is that some producing companies still refuse to open their books to LSPs. Furthermore, the required geographic proximity sets spatial limits for the implementation of the concept.</td>
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++: very high, +: high, o: neutral, -: low, --: very low
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