SOLUTION OVERVIEW QSPHERE
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About company

Quickinim is a private company that provides a comprehensive software solution for supply chain management, automation, and purchasing management in cross-border trading operations. Its headquarters are located in Unna, Germany.

The company's history began in 2012 with the implementation of consolidated procurement operations in the EU. In 2017, we started investing in automated trading operations and creating our own software. This allowed our company to reduce transaction costs, improve the quality and speed of order processing, and reduce the likelihood of errors.

Why QSPHERE

The classical scheme of the supply/logistics department of a trading or manufacturing company is as follows (Fig.1).
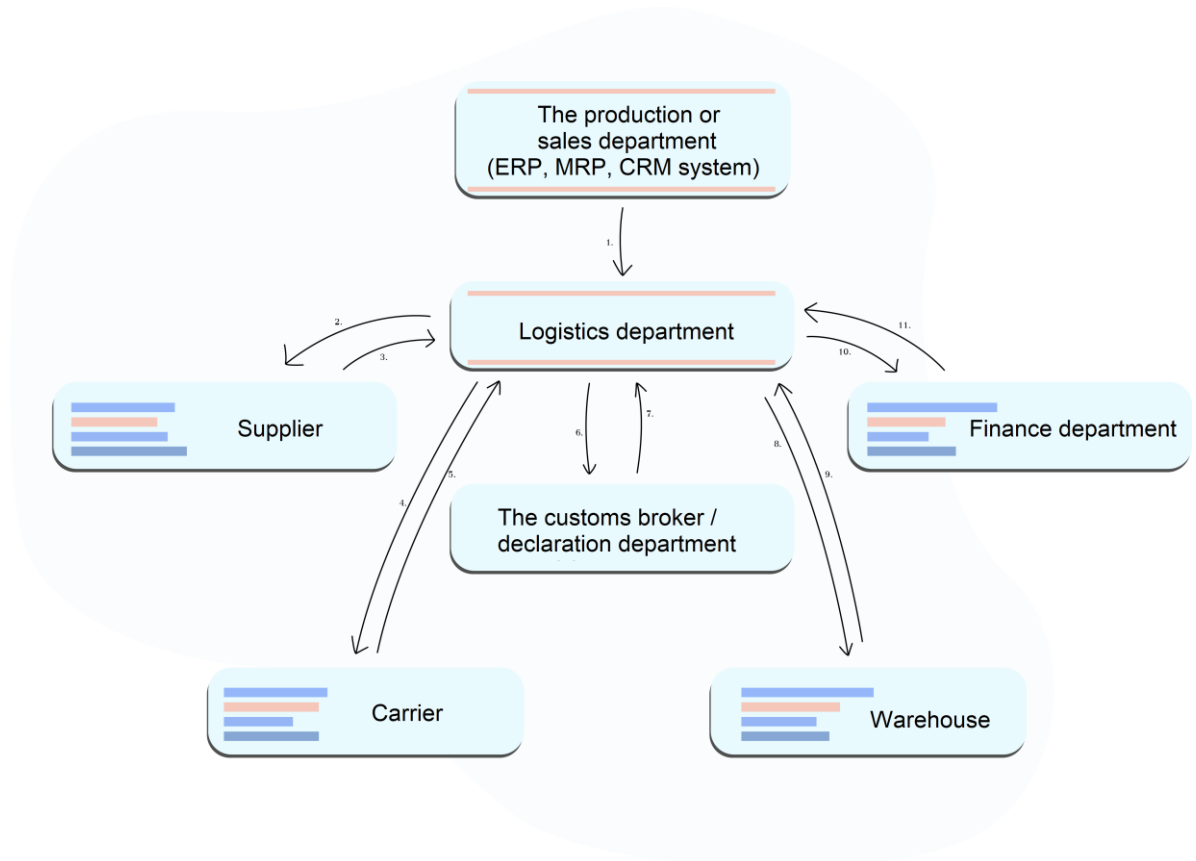

Fig. 1

1. The manufacturing department or the sales department of a trading company places an order to the supply department/logistics for the supply of goods for sale or components for production.

2. An employee of the supply department/logistics contacts the supplier of this product, and orders the necessary product from the supplier. After the supplier has confirmed the possibility of shipping the product of the desired range, at the required price, in the required volume and in the required time, the supply department employee begins to track the production dates of this product.

3. Before the date of shipment, the supplier forms the necessary documents for the goods, namely: invoice, packing list, CMR (if the logistics department employee has provided the necessary data for the CMR, if not, the supplier receives the data after the logistics department assigns the carrier).

4. After receiving the invoice and packing list from the supplier, based on the data of the packing list, the logistics department employee selects the carrier based on the criteria of delivery speed and price. The selected carrier is sent a request for transportation as well as the supplier's contact persons for? loading and shipping documents. The carrier informs the employee of the logistics department of the vehicle number, the driver's contacts, and signs the order for transportation.

5. The carrier receives the cargo and after passing the customs border, the carrier informs the logistics department employee of the data received from the border, as well as the approximate date of arrival of the goods.

6. An employee of the logistics department sends documents: a request for transportation, invoice, packing list, product description, CMR, documents from the border to the declaration department, or to a customs broker, for conducting a customs clearance operation and paying the necessary customs duties and taxes.

7. A customs broker or an employee of the declaration department sends the issued declaration to the logistics department or informs about the need to unload the cargo at the customs warehouse, and an employee of the logistics department informs the carrier what to do with the goods, specifically which goods need to be unloadedand which goods need to be delivered to the warehouse.

8. An employee of the logistics department informs the company's warehouse about the imminent arrival of goods, as well as the list of goods delivered in a vehicle or container.

9. After accepting the goods and comparing the actual goods and shipping documents, the warehouse employee informs the logistics department about the results of receiving the goods.

10. Further, the employee of the department reports documents on the delivered goods to the finance department, passes on account for goods, invoices for delivery of goods, as well as the necessary financial documents and monitors the payment as providers and carriers are turning on late payments in the logistics department.

11. The finance department informs the planned payment dates of invoices, which are then announced to suppliers, carriers and brokers.

Therefore, the described scheme of current work is complex and contains many risks, since a huge layer of manual work falls on the employees of the logistics department. In fact, the

logistics department becomes an orchestrator and a narrow link, the dismissal of one of the logistics department employees can cause significant damage to the company's interests, since many operations are tracked manually. It often takes a long time to find the necessary product that is in the process of delivery, and the ability to analyze the consumed goods is often limited, and must be done periodically in order to optimize supply chains, get additional discounts from suppliers, and expand orders.

QSPHERE unites all participants in the process in a single information space(platform?), and allows for more efficient use of logistics department resources. The logistics department monitors the procurement process using the QSPHERE solution, which frees up employees ' resources to deal with problematic deliveries, track and prevent supply disruptions at early stages, and optimize and reduce current logistics costs (Figure 2).
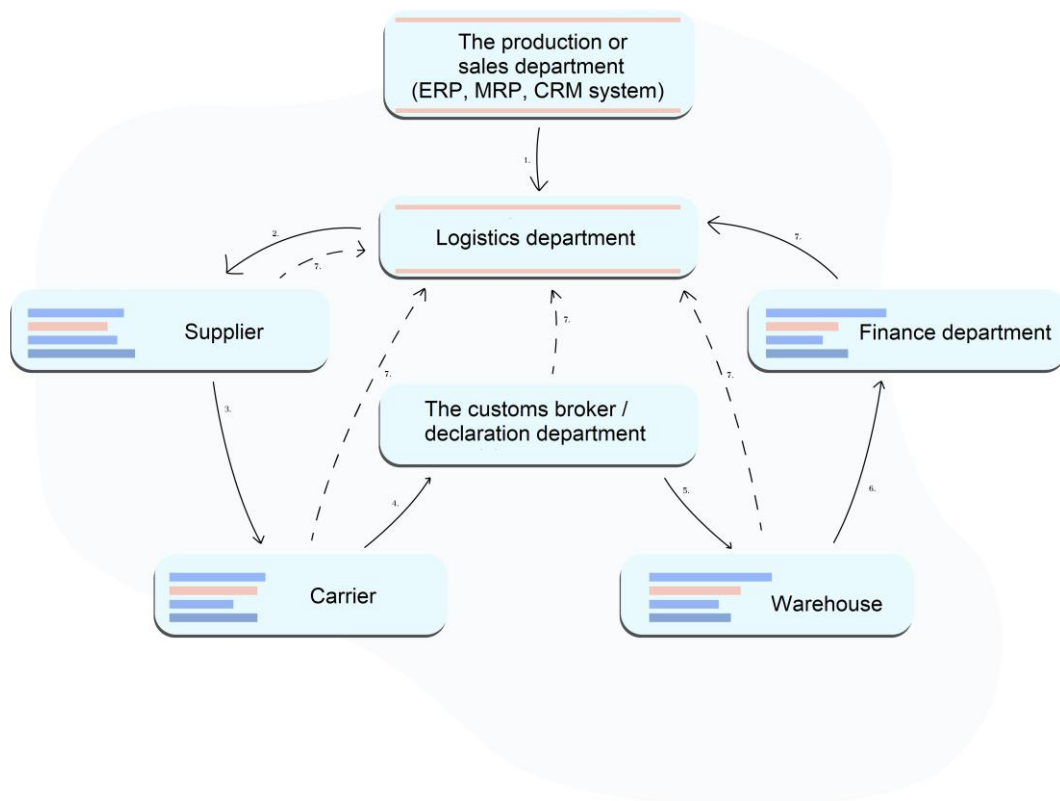

Fig. 2

1. Production or sales department of a trading company places an order to the supply department/logistics for the supply of goods for sale or components for production. An order can be imported directly into the QSPHERE solution, we support various import formats, and we support data exchange protocols with existing systems.
2. The system automatically checks the order for the correct-ness of the item, the actual prices of the supplier, compliance with the production time, minimum order and quantity of required goods. The results of the initial check are displayed to the employee of the supply department/logistics for making a decision about placing an order. If the

required delivery date is earlier than the production period specified by the manufacturer, the logistics department employee will receive a warning and may decide to increase the priority of the order. The system also monitors the delivery time of the order by the supplier. All the suppliers have online access to the published orders.

3. After the supplier has prepared the goods for shipment, it uses QSPHERE to specify the goods ready for shipment, and the system generates invoices, packing lists, and shipping documents itself. The supplier can immediately print out the barcode provided by the system and paste it on the product so that it is easier for the buyer to identify the product in the future. The employee of the logistics department only selects from the list the carrier to whom he sends this request for transportation, after which the carrier can see all the information necessary for the transportation within his personal cabinet.

4. The carrier enters the necessary transport data into the system and after crossing the border, the QSPHERE solution will independently perform the initial verification of documents and warn the logistics department employees in case of identified risks. If the documents are in order, the QSPHERE system generates all customs documents, including the product description and the completed declaration. The customs broker or declaration department only needs to check the declaration and sign it.

5. If the cargo has passed customs clearance, the warehouse employees have their own interface that allows them to see the shipments delivered to the warehouse, get the necessary documents from the system, and perform identification and verification of the arrived shipment. For the convenience of warehouse employees, we have provided the ability to visualize the product, as well as the solution supports a bar coding system.

6. The accepted product is immediately displayed in the personal account of the financial department, where an employee of the financial department confirms the acceptance of documents, and the planned payment dates for the product and services are set. The supplier and the carrier can see the planned payment terms for goods and services in their personal account, without connecting or calling the logistics department employees.

7. The logistics department provides oversight, and makes decisions in case of any problems or risks in the course of delivery. All other interaction between the process participants is carried out through QSPHERE.

Implementation of the QSPHERE solution can significantly reduce the risks of employee errors, increase control over supply chains, and significantly increase the productivity of the logistics department. In addition, the solution reduces the cost of customs brokers, customs operations, and offloads customs clearance departments. The company's management and production can always view the delivery status of any product online and, based on operational information, make the right decision.

Product features

- ✓ *Thin client.* QSPHERE is based on a thin client, which allows you to combine suppliers, warehouses, transport companies, customs brokers, and buyers into a single information space. Orders are placed, documents are exchanged, new orders are created, and goods are received online.
- ✓ *Cloud architecture.* Our partners can use two models of the product: a cloud solution, when a monthly or annual subscription is purchased from our company; and the ability to use the solution on their own infrastructure, having received distributions of the solution.
- ✓ *Easy integration with existing IT solutions.* QSPHERE is easily integrated into the existing IT infrastructure, we support XML exchange protocols and are always ready to modify existing connectors to enable our customers to automate information exchange with existing IT solutions.
- ✓ *Multi-role model support.* Each user has their own role model, which depends on their access rights. To work with the app, you can invite partners and assign them various roles: trading company, supplier, buyer, warehouse, customs agent, carrier.
- ✓ *Automatic generation of financial, shipping and customs documents.* The software allows you to fully automate the business process of receiving orders for goods, placing purchases from suppliers, forming financial documents, international shipping documents for carriers, as well as customs documents if a trade operation occurs between different customs zones.
- ✓ *Saving the user's work history.* Working with orders implies financial responsibility, so all user actions and all communication with the supplier is recorded and the manager can always view the log of any user's actions.
- ✓ *Single information space.* All participants in the supply chain are connected by the QSPHERE solution. Communication can be carried out within the application, using chats and automatically generated email reminders and emails. All user actions must be recorded and saved in the order history.
- ✓ *Support for barcoding.* QSPHERE supports working with barcodes, each cargo space can be marked with a unique code. The given barcode is used for shipment of a batch of goods, storage of the goods in various intermediate warehouses, and acceptance of the cargo from the initiator of the purchase. You can always track the path of any product from the moment of placing an order to receiving this product in your warehouse.
- ✓ *Flexible reports.* The system user can access a wide set of reports on orders, deliveries, shipments, and financial documents. Creating your own reports is an available feature.
- ✓ *Purchasing planning.* The software allows you to plan deliveries, create a purchase schedule, schedule shipments, as well as automatically track the current status of the purchase, send reminders to suppliers and recipients of orders about upcoming dates of shipment or delivery.
- ✓ *General search.* The user can always find the product that was ordered, loaded, arrived at the intermediate warehouse, or handed over to the carrier for delivery. Data on current balances at various stages of the procurement cycle can still be obtained online.
- ✓ *Multilingual.* Due to the fact that state authorities require shipping documents to be provided exclusively in state or official languages for customs operations, our solution supports

multilingualism. Shipping documents can be generated in several languages, depending on the needs of the customer and the state authority.

Supported platform

Thin client. To use the cloud solution, just use one of the browsers listed below: Google Chrome v.71 and later, Internet Explorer 10, 11, Safari v.5 and later.

Using your own infrastructure. To deploy the solution on an Autonomous infrastructure:
1. Physical or virtual application server. Server requirements: 2 x 2.0 GHz Intel Core i7, 16 Gb RAM, 120 Gb SSD, Ubuntu 20.
2. Physical or virtual DBMS server. Server requirements: 2 x 2.0 GHz Intel Core i7, 16 Gb RAM, 120 Gb SSD, PostgreSQL 12.1

Conclusion

Quickinim's professional services has helped save companies significant funds by consolidating procurement activities. Today, our company conducts purchases for more than 140 suppliers from different countries, with a product range of more than 3000.

Our company is constantly working on improving the QSPHERE solution. In the next versions, we plan to add the ability to automatically fill out EU export declarations for goods on the EX1 form, add the ability to automatically create transit and other customs documents required for cross-border trade operations.