



Business Automation

On time – every time

Efficient Service Station Replenishment
powered by OpenTAS® & SAP® OGSD



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Efficient Service Station Replenishment



Timing is the Decisive Factor

The biggest challenge to deal with when supplying service stations with oil products is timing. When deliveries are made too early, valuable logistic resources are squandered. But when deliveries are made too late, the service station will have insufficient supply and the respective filling pumps will have to be closed.

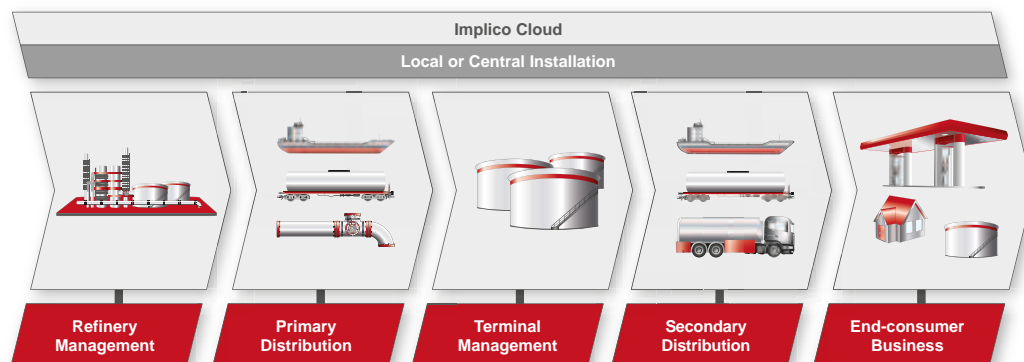
On the market there are many subsystems promising to cover the individual aspects of service station supply. This leads to island solutions which are very complex to implement. Their maintenance is not only very expensive,

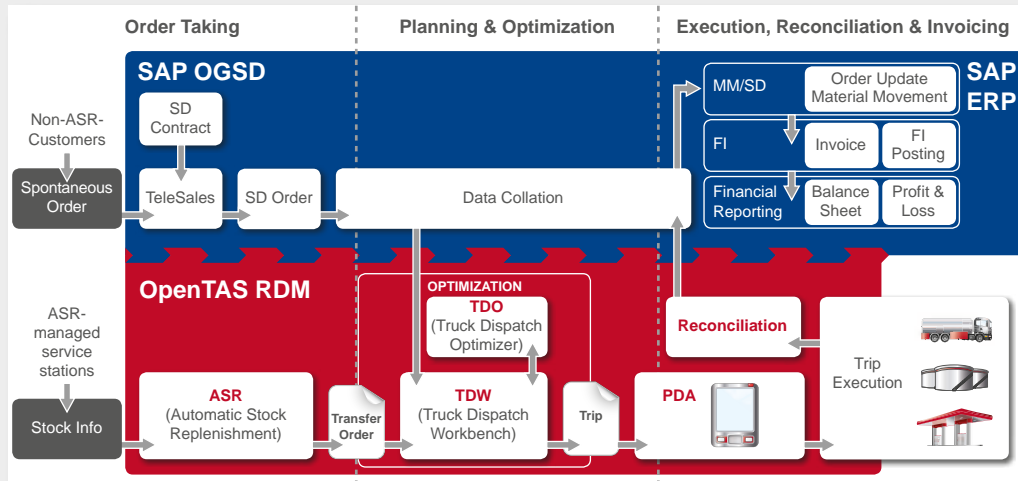
but above all they are inflexible. In particular the communication between ERP systems like SAP ERP® with order automation and planning/dispatch systems is not resolved to a satisfactory level or it is not resolved at all.

Integrated Solution

The solution to the problem is obvious: an integrated complete system that covers all the production steps of service station supply.

Implico offers exactly such a system. Finally there is a solution available that maps the overall process chain, from order acceptance, to route





planning, supply and invoicing. The Implico solution is highly automated, fast, secure, flexible and low maintenance.

The core of the system is based on OpenTAS® RDM (Replenishment and Distribution Management) a real-time administration and dispatch system, and the optional SAP® OGSD (Oil and Gas Secondary Distribution). Implico has succeeded in combining the comprehensive functionalities of this powerful duo in an integrated complete solution.

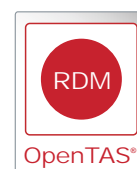
The complete system consistently uses the known strengths of SAP OGSD in commercial administration, such as effective order taking and invoicing. OpenTAS RDM is a special solution for oil logistics. It contributes to intelligent industry-specific procedures and functionalities. The result is a superior solution that optimizes and automates the complete service station supply.

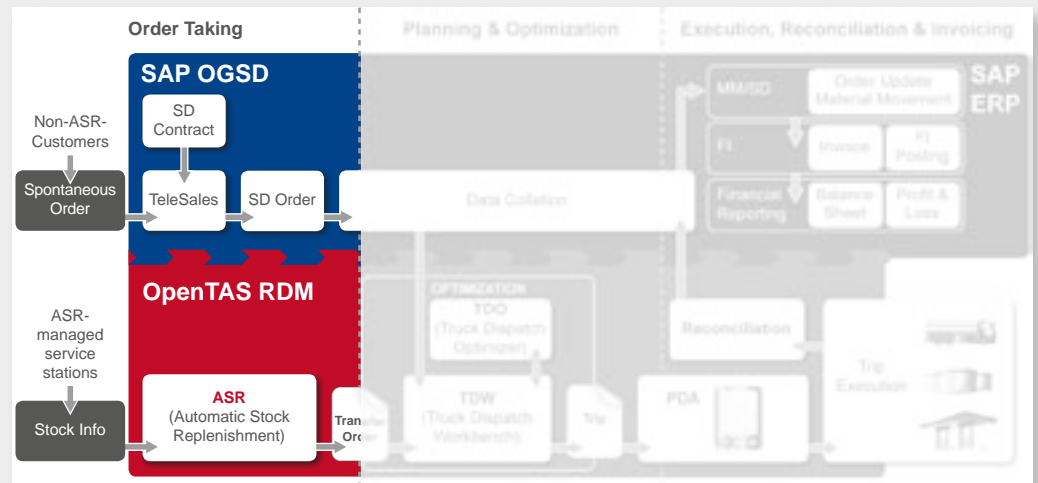
Fully Automated Processes

Thanks to the order automation module OpenTAS ASR (Automated Stock Replenishment) and the various integrated inventory processes, (e.g. fuel dipstick connection, POS connection etc.),

the different service station inventories can be monitored. At an optimal point in time the system generates an order that is available immediately in the Truck Dispatch Workbench (TDW) of OpenTAS.

As soon as the optimal route is calculated, specifying the minimum loading and unloading input and the exact delivery date, the driver can be on his way, staying in contact with the system the whole time through his PDA. In this way his route can be updated, which enables optimized planning. This leads to accurate and real-time invoicing.





Process: Order Taking

Only when orders are placed properly, can products be delivered on time. This means the decisive factor for placing an order is finding the right point in time, and this is influenced by the supply available and the forecasted sales. As soon as a certain threshold level is reached, an order needs to be placed.

In a lot of companies order taking is done manually or it is facilitated by working with individually developed or commercial products. These approaches geared to a certain process step quickly meet their limits. OpenTAS RDM overcomes these boundaries.

Thanks to its integrated approach, it offers exactly the flexibility that is needed for effective order taking. Part of this is that the degree of automation can be defined without any limitations.

Manual Order Taking

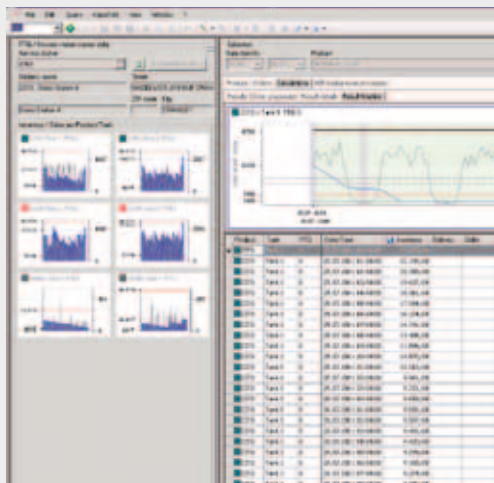
Manual order taking is still very common. The service station tenant controls the supply and

orders by phone. The optional SAP OGSD solution optimally supports telephone sales. Caller ID, the clear-cut masks and detailed information about the buyer ensure that the order is taken care of quickly and service-oriented. It also offers extensive possibilities in the lucrative domain of cross-, up- and down-selling.

Automated Order Taking Thanks To ASR

Implico's core strength is the automation of processes. When it comes to order taking the integrated OpenTAS ASR functionality (Automated Stock Replenishment) outperforms. The software independently monitors the available service station supply. The intervals for these automatic inventories can be defined individually.

The ASR module can calculate in advance when the stock will be depleted. Its high prognosis certainty is achieved by referencing a multitude of historical data. Included are for example previous sales. The period of time that should be taken into consideration can be configured. The historical operating data is already in the system. The intelligence can also be seen in the details. OpenTAS ASR even takes into



consideration the fluctuation between day and night as well as special events like public holidays, school holidays, etc. Thanks to all this information the system can calculate the optimal and most efficient point in time for a new order.

Current Progress Reports

Thanks to the information supplied by the Implico solution the customer is always up to date about the on-site situation. If needed, the system can generate an updated supply report. It is possible to define the type and depth of the information required. It could be the fuel product supply, but it could for example also be the prior sale in the shops by integrating the cash-register systems. Everything is possible.

OpenTAS ASR: Technical Details

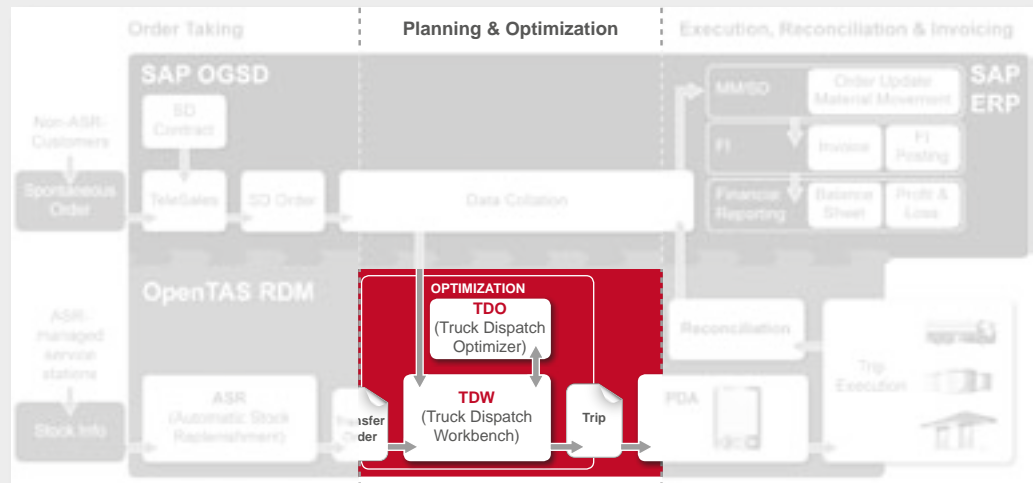
The OpenTAS ASR calculation is governed by various customization parameters and master data. Numerous master data categories are relevant for the OpenTAS functionality: stations (e.g. opening times per day of the week, target drop rate), products (e.g. safety factor in hours opening time and in liters), tanks per product (e.g. several tanks per product, joined or separated, tank size, non pumpable quantity) and history

(e.g. actual supply, calculated trend based on historical data).

ASR is a permanent process (system service) which runs 'in real-time' when new supply information comes in. ASR is not a batch process which will cause heavy server load each time it is invoked. The result of each ASR run is a new replenishment point for a specific product of a station. The earliest product replenishment point will become the station replenishment point.

The product quantities are calculated by the OpenTAS TDO module (Truck Dispatch Optimizer). It takes the truck compartment sizes into consideration. Another highlight: OpenTAS ASR uses the actual opening hours of the stations for its calculations. This will produce more accurate results than a standard 24 hour day.

With the trends, the other master data and its parameters OpenTAS will calculate the average sale per hour which will be used for the forecast.



Process: Planning & Optimization

Route Planning – The Optimum is the Goal

Whether manually entered into SAP OGSD or automatically conveyed from the OpenTAS ASR module, the new order is now available with an exact delivery date. The challenge is to carry the order out as efficiently as possible. The OpenTAS TDO functionality (Truck Dispatch Optimizer) offers the optimal system support; it ensures that the personnel and the vehicles are employed in the best possible manner.

Minimized Drop-Rate

The optimal scenario: the truck is completely loaded once and then completely unloaded at the service station. This eliminates unnecessary driving and it means that the personnel and the vehicles are used optimally. In this ideal case the drop-rate is 1.0. A positive side effect of complete unloading is that trucks don't need to be equipped with complex measuring instruments. This saves costs on the trucks and it makes the work simpler. Unfortunately in reality the ideal rate of 1.0 is not always reachable, but the

OpenTAS/SAP OGSD system allows customers to come as close as possible to this rate. Calculations show that companies using OpenTAS managed to decrease their drop-rates reaching values that competitors can only dream of.

Route Plans – The More Updated the Better

Route plans need to be compiled intelligently and they need to be as updated as soon as possible. They are the key to success in logistical as well as commercial aspects. Thanks to the TDO module a route plan can be compiled that optimally uses the customer's resources.

Timing is also a deciding factor for route planning. If the planning takes place too early, current orders cannot be processed anymore or only with high operating costs.

Therefore the deciding factor is to plan as soon as possible but at the same time keeping the planning certainty in mind. The TDO module always keeps the overview. For existing orders it does a rough planning at first and then updates automatically. At the decisive point in time a final shift schedule is available, that also puts the latest developments into practice.



OpenTAS TDO: Technical Details

The ASR process generates Transfer Orders for the stations with a priority list. The OpenTAS TDO module uses this list to calculate the optimal delivery sequence for the stations. The OpenTAS TDO solution is different than other products on the market. It will produce more accurate results for truck optimization by taking into account the compartment sizes of the trucks for example.

Depot & Carrier Assignment Optimizer

This step is executed normally only once during the entry of new master data of stations, customers or carriers. Distances, driving time and the cost for the next depots are calculated.

Neighborhood Optimizer

It calculates process distances, driving times and the cost to all customers/stations in the 'neighborhood' that have the same depots assigned up to a limit of distance, driving time and cost.

TDO Process

Truck Assignment Optimizer

Customer orders normally have various products and quantities. If OpenTAS has a delivery history

of that customer, the rate between the ordered quantity and the delivered quantity for past deliveries could be used to optimize the current ordered quantity. At this point of time TDO knows the replenishment points, free capacities etc. TDO now assigns the trucks and the station order quantities depending on station needs (ASR history), truck compartment sizes, etc. Many parameters determine the way TDO is working. Target drop rate, target station product reach, trip length, shift times, planning horizons, truck use safety factors, target payload rates etc. Also depots are now selected and assigned to the trip depending on product cost and availability.

Depot Assignment Optimizer

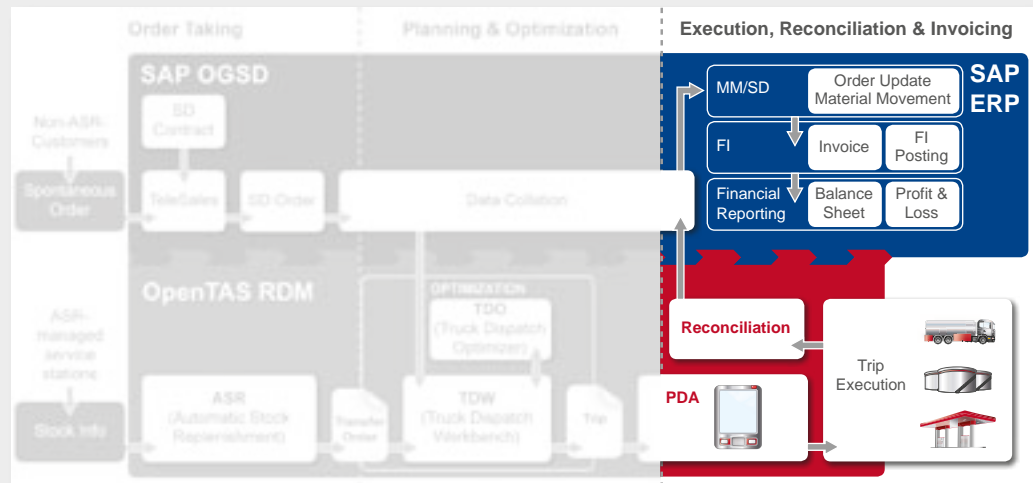
Distance, driving time and driving costs are taken into consideration.

Driver Assignment

Depending on trip times, shift times, working time regulations and other restrictions TDO assigns drivers to the trucks with planned trips.

Carrier Interface

With the help of different interfaces planned trips can be assigned to respective carriers. Trip maps can be visualized by an external mapping tool.



Process: Driver Communication

Constant Contact with the Driver

The route planning generated by the OpenTAS module TDW is transmitted electronically to the driver's PDA or onboard computer. That way the driver has an overview of upcoming tasks.

Thanks to the PDA communication the control center knows when the driver starts and when he reaches a depot or service station; he can also inform them when he has finished loading/unloading

Connection

OpenTAS PDAs or onboard computers in the trucks are connected to the central OpenTAS system via GPRS. The communication format is mainly XML.

Communication between OpenTAS TDW and OpenTAS PDA:

- Data sent to truck computer
- Trips
- Checklists
- Authorized GPS coordinates
- Driver messages
- Data sent from truck computer
- Finished trips and orders
- Completed checklists
- Sensor data (OTC necessary)
- Error protocols
- (e.g. unauthorized GPdelivery coordinates)
- Drivers working time information, breaks, etc.
- Permanent GPS position messages





Process: From Delivery to Invoicing

Delivery

During the execution of the order the system offers the customer maximum transparency. The control center is always informed about what is happening inside and outside of the facilities so that they can react quickly.

Route Planning Actualization

The processing of real-time data shows the superior functionality. The current data delivered by the driver is used by OpenTAS to control the compliance with the route plan. If starting or unloading takes longer than planned, the plan is changed immediately. The disposition team is always informed in a timely manner so that, for example, they can send an additional vehicle when needed.

Reconciliation

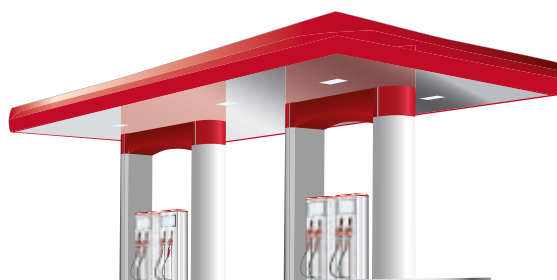
The reconciliation process is one of the highlights of OpenTAS RDM. During reconciliation OpenTAS checks, sorts and enriches the data

before connecting it to the SAP business workflow. Reconciliation data comes back to OpenTAS in three ways: manual input in OpenTAS, closed trips from truck computers and via OpenTAS web interface. Reconciliation data can be customized.

In case no truck computers are in use, all trip data (distances, times, quantities, etc.) could be entered manually or through the web interface.

Immediate Invoicing

The PDA integration not only leads to more transparency and quality in the operative logistics area, but it also enhances invoicing. The order can be invoiced directly after the unloading process and the actual services are invoiced.





Process: Reporting

Standard reports are provided by the OpenTAS report engine; additional customer specific reports can be created. The results are provided in real-time and in various formats.

Here is an overview of available standard reports:

- **Trucks:**

E.g. Efficiency (distance, hours, quantities, payload rates – all trip, drop, shift), truck control (gains and losses per truck, tour, driver, drop), cost evaluation (cost vs. freight rates). Average values for drops/tour, qty/drop, hrs/drop, distance driven/drop, cost per drop are of special interest in this section for rating the logistics efficiency.

- **Stations/Stock:**

E.g. Gains and losses per station, per product, per pump manufacturer, cumulative and average sales, gains and losses, tank temperatures, cumulative and average deliveries, sales forecast per station, local area, country, region with associated depot quantities.

- **Depots:**

E.g. Quantity comparisons (with temperatures and densities), depot quantities vs. delivered quantities, differences cumulated by depot with depot ranking.

- **Drivers:**

E.g. Similar to trucks, used for driver evaluation and control.

- **Carriers:**

E.g. Carrier comparison with remaining quantities, payload rate, drop rate, filling rate.



Frost & Sullivan Award for Implico's Downstream Solutions

Implico is the recipient of 2011 "Global Customer Value Enhancement Award" from Frost & Sullivan. The global business research company recognizes the role that Implico's integrated, high-end software products play in creating added value for its customers, who thereby achieve competitive advantages.

Implico is the recipient in the category "Downstream Distribution Automation Solutions for Oil and Gas industry". Frost & Sullivan highlighted the fact that the process flow optimization enabled by Implico makes it possible to reduce operating expenses by up to 25 per cent. Frost & Sullivan: "The fact that Implico is the only terminal management & automation software solution provider in the world to be a SAP endorsed business partner explains the organization's focus on delivering customer value."



About Implico

As an international consulting and software company, Implico has been supporting customers from different industries with the optimization of their business processes.

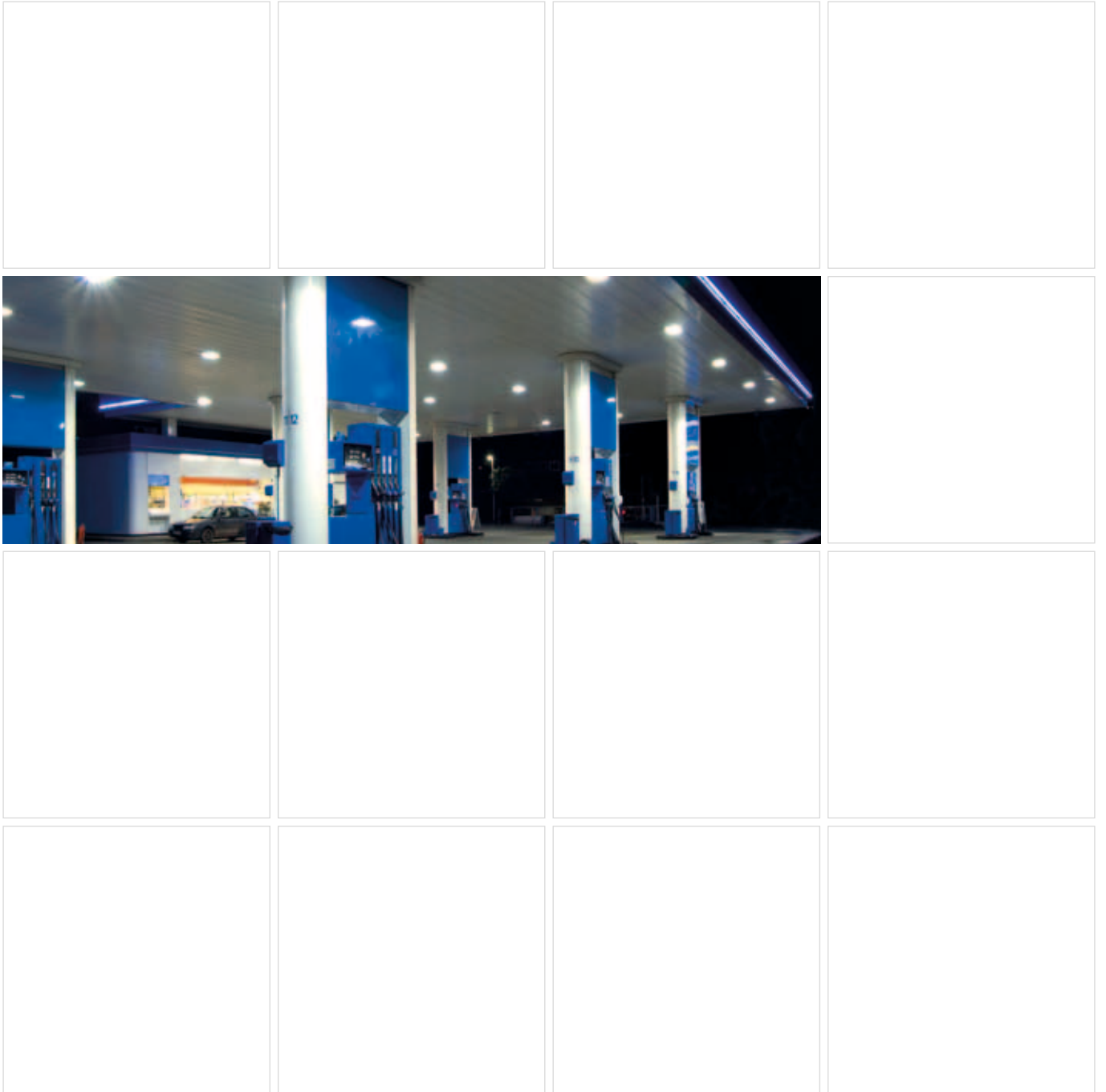
The company was founded in 1983. The Implico Group, with their headquarters in Hamburg, Germany, has subsidiaries in Malaysia, Romania, Switzerland, UK and in the USA.

Projects are being implemented with extensive industry know-how as well as in budget and on time. Implico offers professional, integrated consultancy and implementation services from a single source.

Five of the ten biggest oil companies in the world rely on Implico's professional experience, consultancy skills and high-performance products.

Implico is a Microsoft Gold Partner, an SAP Endorsed software developer and member of the Oracle Partner Network.

The dynamically growing Implico Group currently employs about 250 employees worldwide.



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