

$$\sum_{n=0}^{\infty} \frac{x^n}{n!}$$

$$(k!)^4$$

$$\frac{2\sqrt{2}}{9801}$$

$$\sum_{n=0}^{\infty} \frac{x^n}{n!}$$

8 Tactics to improve efficiency and service in the downstream energy industry

E-Guide

Find out how leading energy companies are keeping their competitive edge through optimization



Introduction

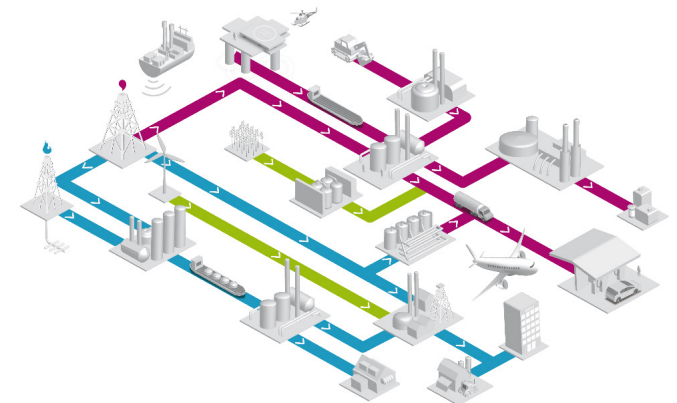
With volatile demand and prices, dwindling reserves and rising costs, energy companies are increasingly seeking to gain operational insights and optimize their supply chain. To complicate matters, regulations are getting more stringent.

Given this market landscape, energy companies need to embrace new approaches and start leveraging data to provide cutting-edge services if they want to stay competitive. This E-Guide discusses 8 innovative optimization tactics that world-class energy companies have implemented to improve their efficiency and service in their downstream business.

This E-Guide mainly focuses on the oil and gas downstream processes within the energy industry.

The 8 tactics

- [1. Automation and digitalization](#)
- [2. Vendor Managed Inventory \(VMI\)](#)
- [3. Peak shaving](#)
- [4. Real-time dynamic planning](#)
- [5. Customer success](#)
- [6. Transportation intelligence](#)
- [7. Dynamic sourcing and depot allocation](#)
- [8. Centralized planning](#)



Tactic 1:

Automation and digitalization

The use of advanced analytics is not entirely new to companies in the energy industry, especially when it comes to supply chain planning and optimization. For those companies that use state of the art digitalization the benefits are numerous. For example, decision making based on data, better insights and visibility, and more efficiency.

Yet, many have been slow to adopt other transformative technologies like machine learning and IoT (Internet of Things) devices. This is largely due to the cybersecurity implications of these technologies. As former BP's CEO Bob Dudley states, "new technology creates risks as well as opportunities."

A digital future

Despite this, there is no denying that digital

transformation is an imperative and that adopting new technologies can be incredibly valuable to reduce costs and increase productivity. Evaluate the security implications of these technologies in your organization, assess the risks and prepare contingency plans. Preparing for a digital future also goes hand in hand with preparing for an impending energy transition. Digital technologies are needed to help oil and gas companies optimize operations and stay agile in the face of change.



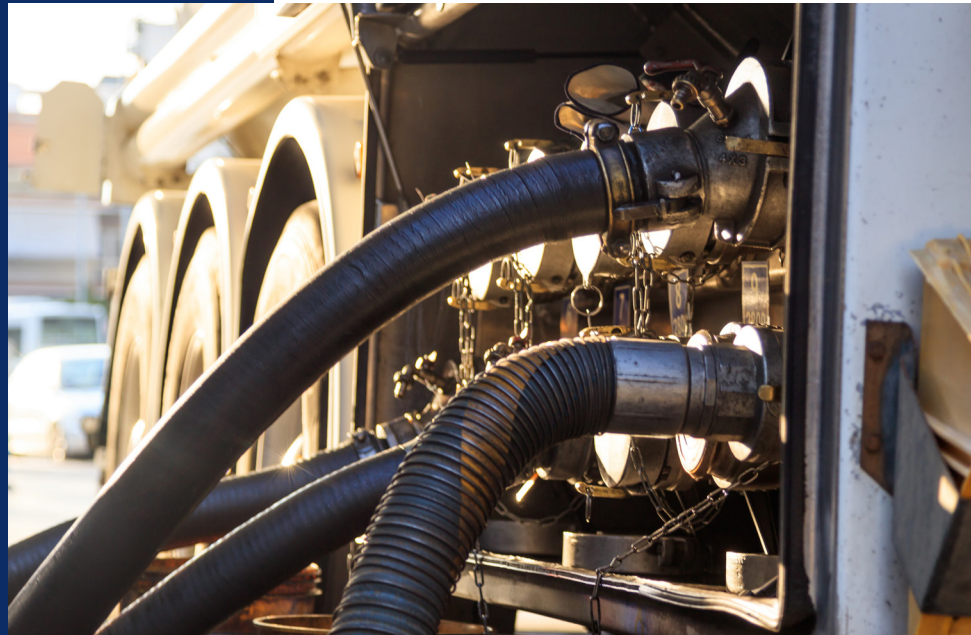
Tactic 2:

VMI: Taking your customer deliveries to the next level

Delivering oil & gas products is about much more than assuring the customer gets everything on time or within the agreed SLA. Industry leaders focus on building customer success, long-term partnerships and high-quality customer service. Many energy companies have achieved this by offering a Vendor Managed Inventory (VMI) service to their customers.

VMI gives the vendor the ability to monitor, plan and control inventory for their customers. Customers relinquish ordering responsibilities and rely on their providers for timely inventory replenishment that increases their organizational efficiency.

VMI shifts the burden of ordering products away from your customers and/or retail stations, helping them focus on selling fuel and other product streams. On top of this advantage, VMI provides a lot of flexibility for energy companies. With it, you own the responsibility to replenish the customer on time and prevent a run-dry. No stock-outs mean happier customers and more revenues.



Companies following this approach typically use an advanced planning system that embeds VMI and fully integrates forecasting, order generation, planning and dispatch management. Ideally, this system also provides better insights and capabilities to become less reactive and more proactive and customer focused.

Moving from traditional ordering to full VMI is often a gradual process. So it is important the technology supports a 'hybrid' mode: part of the customers on VMI and part ordering in an alternative way.



Tactic 3:

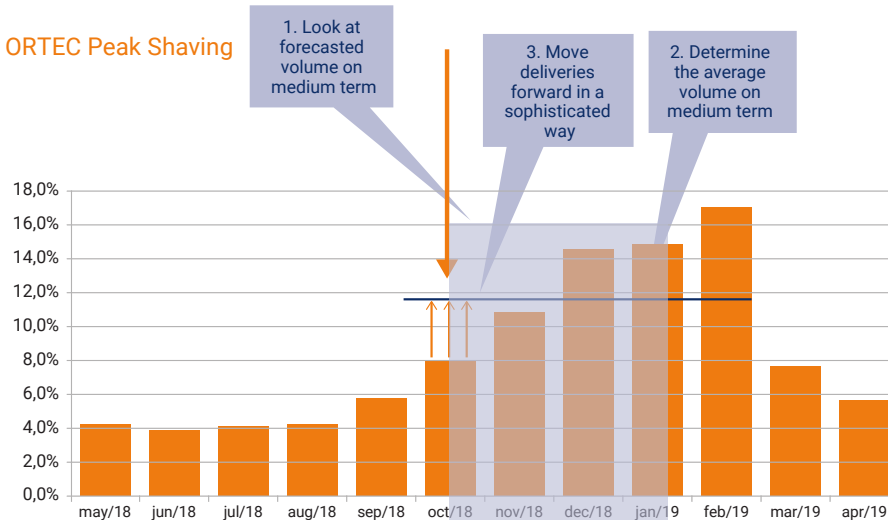
Peak shaving: Smarter planning to deal with demand variability

Demand variability is a given. Energy companies are no strangers to this axiom. For instance, when a product is used for heating, it sees higher demand in colder periods. As a supplier, balancing deliveries to cover these usage peaks is a big challenge. Resource capacity (in both fleet and drivers) is limited and, generally speaking, sizing resource capacity based on peak demand will result in extra costs and overcapacity during low demand periods.

To fulfill peak demand with the available resource capacity, you can spread deliveries throughout low demand periods. That way, you anticipate peak demand and reduce the number of deliveries needed during busier periods.

But how do you decide which deliveries can be moved to low demand periods? That is a complex decision that depends on multiple factors, like the amount of volume required in the overall period, local storage capacity, the location of storage depots and ullage at each customer storage location. Peak shaving technology can help you balance these factors.

ORTEC Peak Shaving



The results include

- Balanced amounts of supplied products (see picture)
- Increased resource utilization (over 30% improvement based on our research)
- Reduced Kilometers per Ton (results show around 20% reduction)
- Less rush orders, and therefore less unforeseen costs.

Tactic 4:

Real-time dynamic planning: Improving customer service while preventing costs

As a customer-oriented supplier, you want to be in control during the execution of the schedule. Deviations from the plan will occur but this can affect agreements with customers. Deviations also tend to result in extra costs.

Preventing adjustments therefore translates into preventing costs. This can only be done when you're able to get real-time information from daily operations (for instance, through mobile applications). Having this information allows you to respond adequately to changes in real-time.

By monitoring the schedule and adjusting it based on real-time execution data, planners can make informed decisions to save costs while serving customers in the best way possible.

Tactic 5:

Customer Success: Informing customers about order details and delivery times



Your team's delivery plan needs to consider many factors, and has to be flexible enough to deal shifting traffic conditions and other real-time changes. This data-driven capability is not only beneficial for planners who need to update a schedule quickly. It's also useful for customers.

Naturally, both VMI (Vendor Managed Inventory) and CMI (Customer Managed Inventory) customers should be informed about delivery times, as well as the type and number of products they will receive. Arrival times should be based on actual traffic information and updated when unexpected circumstances alter the route. That way, your customers will always know when to expect their deliveries.

For instance, if your driver is stuck in a traffic jam, you can notify the customer of any changes to the schedule in real-time, and provide an updated ETA.

Real-time insights are also useful for suppliers and managers. Such end-to-end visibility is also known as a "Control Tower." Once you gain better insights, you can compare past plans with execution data in order to analyze problems and improve your planning process.



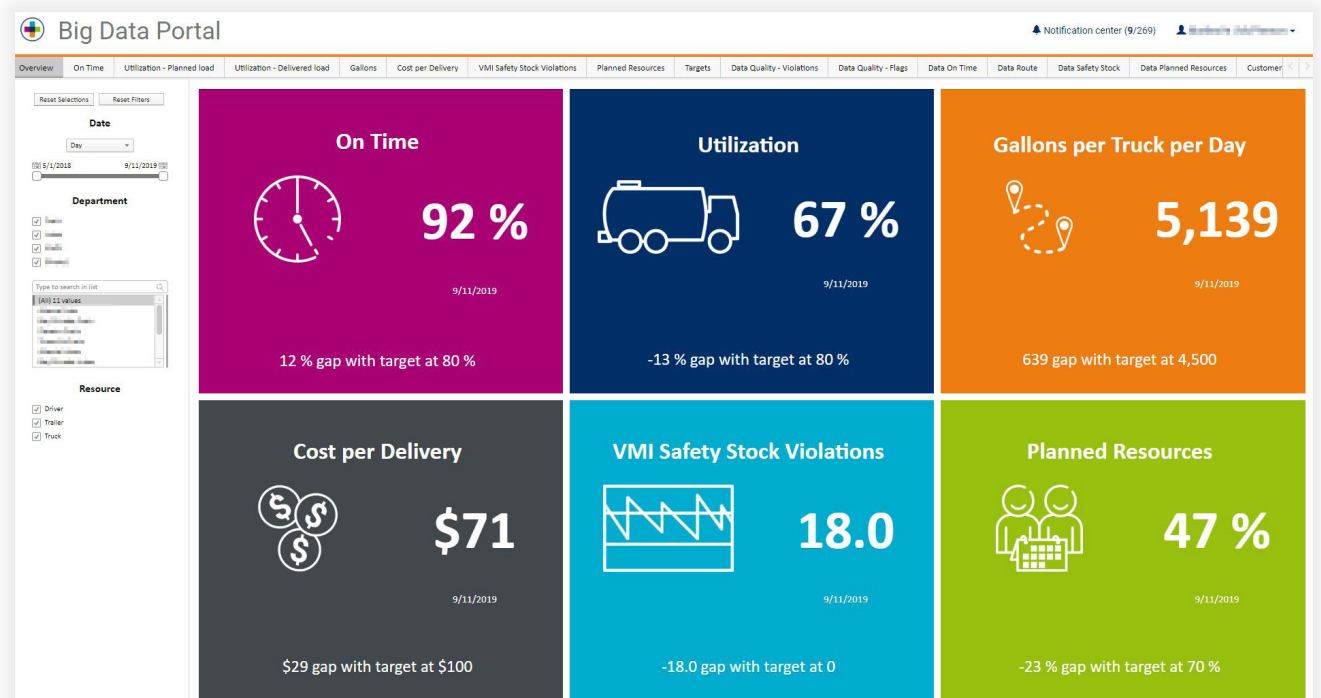
Tactic 6:

Transportation intelligence: Knowing your operation best

Transportation in the energy industry is a costly business. Together, inventory and transport make up 80% of operational costs.

To keep these costs under control, companies like to measure their transport operation in terms of PIs and KPIs. Transportation intelligence solutions can help you measure your fleet's performance based on these indicators, providing a 360° view on your business.

Look for intelligent dashboards that display these KPIs in a user-friendly manner, enabling you to track performance over a certain period of time and more easily determine a Year-over-Year (YOY) trend. This will help you make the right decisions, based on actual and correct data.



A dashboard like a Big Data Portal gives you insight and the ability to recognize areas of improvement.

Tactic 7:

Dynamic sourcing and depot allocation: Loading at the right depot

Every planning exercise starts with determining at which depot products should be loaded. Depot allocation is a difficult puzzle. To do it right, planners need to consider product availability, capacity and exchange contracts.

Finding the right depot is an even more cumbersome and time-consuming exercise when there are different price levels or applicable penalties. E.g. if depot A is close, but price or cost are high, it can be more efficient to load the product(s) at depot B (further away, less cost).

Your team can benefit greatly by determining

- the right depot-customer assignment automatically and upfront
- getting an even order-depot assignment from a customer demand perspective while considering many constraints
- trip-depot assignment based on the schedule and the orders in the scheduled trip.

By combining a mid-term, tactical approach with a more operationally-driven assignment, the planner can make the right depot/customer allocation.



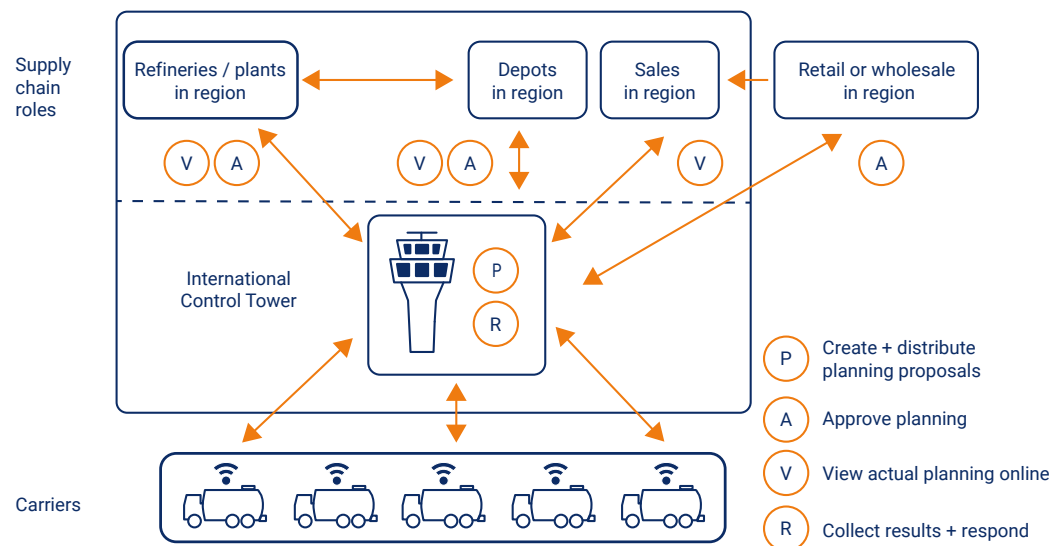
Tactic 8:

Centralized planning: Removing silos and increasing transparency

Suppliers with multiple depots usually have the planning process for customer deliveries secured locally. This allows your personnel to oversee what happens at each depot. But this approach has its disadvantages. Each depot has its method, employs its own personnel and makes separate use of its materials. There is no exchange of best practices and experiences, and no exchange of resources and capacity. Data is managed in silos and there is little to no governance or visibility.

The advantages of a centralized planning process are numerous. For instance, when your fleet is centrally planned, you can evaluate if it's more efficient to drive to two depots before making a run to a customer or a remote area. Centralized planning also allows your team to share best practices and encourages

transparency in the planning process. If your team is not yet ready for centralized planning due to local alignment issues, you can start by implementing a single system where each planner can create and upload their schedule. That way, everyone has access to it.



Conclusion

The road to business success does not have to be long and winding. Follow these 4 steps to get started:

1. Assess how these 8 tactics can support your supply chain strategy by positively influencing your own set of KPIs.
2. Describe your desired planning process, the capabilities you need to support it and the potential to introduce optimization technology to drive it forward.
3. Select the right technology partner. Ideally, this partner should have sufficient knowledge and experience in the energy industry to help you implement a new analytics initiative and help you reach your business goals. Integrate the solution with your backbone (TMS / ERP) system and with your mobility solution (if relevant and already present).
4. Start implementing the improvements. Minimize the risks and maximize short- and long-term benefits by involving key users and change management specialists.

Read the following customer stories for examples of these implementations.

Customer Case

Wincanton



Wincanton is the largest British logistics firm. The company has been operating tankers since 1925, and currently runs a fleet of 500 modern petroleum, aviation, lubricant and bulk gas vehicles incorporating the latest safety and performance innovations.

The challenge

Wincanton is investing heavily in digitalizing their transport systems. Their transport strategy must support safety, growth and fleet optimization. They were looking to improve their planning and model delivery scenarios. In particular, they wished to use operational data to simulate routes and loads in a virtual environment, informing real-world operations.

How we create value

Planning and modeling of delivery scenarios

Benefits

- Improved planning and route optimization result in timely and efficient deliveries
- Improved Wincanton's ability to harness Machine Learning, AI and sensory technology to dynamically manage all of its transport resources in the future
- Empty mile reduction
- Proactive customer service
- Improved load planning
- Fuel usage data collection.



Customer Case

Engen



Engen is an oil company in South Africa. One of their focus areas is the downstream refined petroleum products market and related businesses.

The challenge

Engen's order planning and route scheduling system had reached its end of life. Upgrading to a new system was crucial. They were looking for a provider that understood the oil and gas space and had experience with Vendor Managed Inventory.

How we create value

Optimization of Replenishment and Routing

Benefits

- Improved planning agility and capability
- Increased customer satisfaction
- Time savings
- Lower greenhouse gas emissions with optimized routes
- Compliance with HSSE regulations



Customer Case

The McPherson Companies, Inc



The challenge

McPherson is a leading supplier of fuel & lubricants and partner to the convenience store industry. They are one of the top ExxonMobil distributors in the USA. The biggest challenge for McPherson was to standardize their operations and drive efficiency following the acquisition of several other distributors.

How we create value

Optimization of the supply chain, the inventory and routing, centralize and standardize the order to cash process.

Benefits

The most important benefit for McPherson is the ability to add locations and customers without adding additional staff.



Customer Case

Primagaz



Primagaz is Belgium's leading supplier of propane gas. With a network of more than 1,200 sales points, Primagaz is never far away from the Belgian consumer.

The challenge

High costs and inefficiency compelled Primagaz Belgium to revisit their supply chain network design. They needed analytics expertise to test their redesign assumptions and evaluate alternatives.

How we created value

Optimization of the supply chain

Benefits

- 100,000 euros in savings projected
- Cost benefits from centralized administration
- More control over distribution operations
- Improved visibility into customer requirements
- Better stock management





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[ORTEC.com](https://www.ortec.com)

About ORTEC

ORTEC is one of the world's leaders in optimization software and analytics solutions. We make your business more efficient, more predictable and more effective. Turning complex challenges into easy-to-use solutions. We serve clients in almost every industry. And with offices strategically located across the continents, we can deliver solutions on a global scale. Always underpinned by local know-how and service.