



The Leaner Greener Challenge

Becoming a sustainable corporation is more than reporting emissions levels. Find out more how to optimize your carbon footprint and start your sustainable transportation strategy now.

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Public interest in eco-friendly alternatives have given rise to corporate sustainability initiatives.

Now more than ever, transportation providers must find ways to reduce greenhouse gas (GHG) emissions without reducing customer satisfaction and profitability. Public interest in eco-friendly alternatives and mounting governmental regulations have given rise to corporate sustainability initiatives addressing these issues. While these goals are laudable, sustainability can add costs that must be offset with efficiency gains. This means supply chains need leaner and greener transportation processes that will continue meeting customer expectations.

The global supply chain owes much of its efficiency to Just-In-Time (JIT) logistics that expect delivery of material wherever and whenever required. Transportation networks are designed to service this demand, moving high volumes of smaller shipments over long distances at minimum cost. The lean, agile networks that keep production lines running also fuel the explosive growth of online

commerce and its increasing customer expectations for a lower price, faster, personalized delivery service. The downside to all of this is more delivery vehicles on the road, traffic congestion, and GHG emissions that are highly visible to the public and the politicians seeking their votes. Consumers are voting at the cash register and election polls, and they want to keep all of these benefits without the collateral costs. That's a big-ticket to fill.

There are plenty of untapped efficiency gains that can be harnessed through further supply chain digitalization. With careful planning and using tools like a Digital Transportation Twin to guide implementation, integration with existing supply chain partners and processes can be achieved without disruption. Several solutions represent the low hanging fruit of transportation sustainability improvements and also promote Logistics 4.0 digitalization:



Transportation Optimization
to minimize delivery costs and emissions with solutions like dynamic routing and planning, standalone systems.

Replacing heavy emission assets
like diesel trucks with greener electric or hydrogen-fueled trucks.

Utilizing lower emission shipping modes
such as ocean, intermodal rail, and reducing air freight.

Transportation Forecasting
to incorporate future shipping volume into planning for more consolidation, securing future capacity, and optimizing loads for multiple deliveries.

Digital Freight Matching
to improve capacity utilization through freight pools, electronic brokerages, and load matching.

Green Incentives
offered to customers in exchange for utilizing more sustainable delivery options like those mentioned above.

While these solutions can be implemented quickly and with minimal resources, the first choice for many companies is transportation optimization, explicitly planning and routing. Several advantages make planning and routing optimization the ideal starting point for a transportation sustainability

initiative. In short, it produces the most significant gains, plus it increases the effectiveness of the other improvements listed. Additionally, an intelligent planning and routing solution can guide transportation decisions to ensure compliance with green regulations.

Green Regulations

Penalties for exceeding CO₂ limits will continue increasing, and companies should already be implementing one or more of the solutions previously noted to stay ahead of this cost curve. As of January 2021, transportation and logistics companies have been hit with an annual increase in diesel and LNG prices at German service stations. This price increase intends to achieve the 2030 climate targets set by the German government, in addition to reducing CO₂ emissions on Germany's roads. With similar increases globally, companies need a global solution for reducing their carbon footprint, and it is imperative to implement now to avoid carbon taxes.



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As stricter emissions regulations push corporate sustainability standards to ever-higher levels, logistics providers will need to consider vehicle types for transporting shipments. This is especially pertinent to the automotive industry as manufacturers must produce larger inventories of lower-emission vehicles. According to Herbert Diess, Member of the Board of Management of Volkswagen, the group

is making good progress towards becoming a CO₂-neutral company with their new vehicle fleet in the EU. VW and Audi are expanding the number of electric vehicles (e-mobility) as part of their e-offensive, and other manufacturers are following suit. While regulations currently apply to passenger cars, similar restrictions will be enacted to produce and use green commercial delivery vehicles. Now, infrastructure for charging vehicles is inadequate, and a limited range makes electric vehicles most attractive for serving urban routes with high-density pickup and deliveries.

A combination of fines and incentives will encourage the purchase of these vehicles, such as exempting electric trucks from tolls, tax breaks, or allowing usage of commuter lanes. These measures provide businesses an economic rationale for optimizing their ecological footprint. Transportation optimization software will play a critical role in assessing these costs and the service limitations of vehicles.

Public Perception

Sustainability initiatives allow forming relationships with the public if approached correctly. Word of mouth remains the most powerful endorsement, with online opinions being a close second for many. Unlike word of mouth, information posted on social media and websites continues broadcasting a message, shaping a company's brand for

years to come. Whether your organization receives positive or negative press on environmental issues, the public will take notice and speak up. Sharing how your company improves the quality of life for the reader through sustainability helps readers personalize the benefits of reducing CO₂ emissions. This provides a more meaningful message than merely reporting facts, and responding to their feedback is better yet. A company authentically interested in the welfare of individual readers without expecting something in return will likely have readers more interested in the company's interest. Remember, prospective customers are members of the public, and their response to your company largely depends on how your company engages them (the public).





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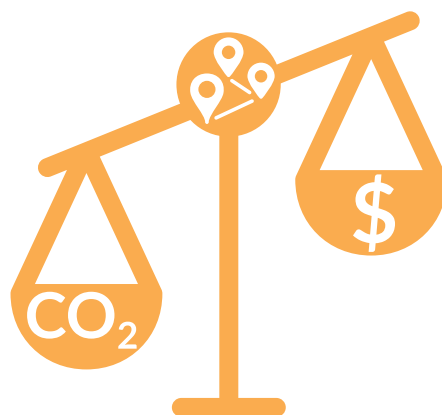
Transportation sustainability initiatives afford an excellent opportunity for connecting with the public. The trucks we see on the road and the delivery drivers who bring goods to our front porch are part of daily life. Most of us are interested in hearing how these familiar services affect us personally, especially when it benefits us. Showcasing the benefits of sustainable transportation in a relatable

manner is more likely to be appreciated, and it reflects your company's long-term commitment to public welfare instead of short-term publicity. A relatable message that's free of jargon and brand promotion also helps overcome widespread cynicism towards corporate activism, which might otherwise dismiss sustainability as self-serving "me-too" marketing.

Leaner Greener Routing

The transportation industry is a big contributor to carbon and GHG emissions. In 2018 alone, more than 160 million tons of CO₂ equivalents – 20% of the energy-related GHG emissions – were accredited to the transportation industry. Trucks account for a whopping 87% of GHG emissions in freight transportation, reflecting the prevalence of trucking in the industry and its potential for significant emissions reductions. Can meaningful reductions in emissions be realized without sacrificing efficiency and profitability? Yes, yes, and yes. For years, logistics providers have been doing this for years using the flexis' Vehicle & Routing & Scheduling (VRS) solution.

Transportation optimization is the key to profitably reducing emissions, and flexis' VRS offers an example of how it can maximize profit, emissions reductions, and customer satisfaction for every shipment. VRS streamlines planning and routing for multi-stop pickup and delivery routes while optimizing each delivery's economic, environmental, social, and customer satisfaction impact. The delivery plan it produces ensures the optimal outcome for individual shipments, truckloads, and entire fleets of delivery vehicles. VRS accomplishes this through a comprehensive analysis of current and forecasted order demand, available equipment, consolidation opportunities, multiple distribution points, and numerous constraints. Dynamic routing keeps the plan on track by adjusting the route in transit as changes occur, such as traffic conditions and last-minute customer requests.



VRS is designed to make it easier for companies to transition into a sustainable transportation process without disrupting operations. This solution can run parallel to existing systems and is configured with the capabilities a company needs. Hence, it blends into workflow while maximizing profitability and emission reductions. A comprehensive suite of features addresses the full range of distribution and procurement activities, from initial planning to the last mile, to optimize as much of the process as needed.



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Carbon Footprint Optimizer



An organization becomes green when everyone involved is committed to sustainability benefits.

The Carbon Footprint Optimizer is an add-on module for VRS that minimizes the CO₂ footprint of shipments. The Carbon Footprint Optimizer evaluates, optimizes, and records all parameters affecting CO₂ emissions according to DIN EN 16258. This data is used to optimize routing, network, and tariff negotiations, ensuring an outcome with the best possible combination of cost, GHG emissions, and delivery performance.

Environmental management solutions are available from many vendors, so how is flexis' Carbon Footprint Optimizer different? The Carbon Footprint Optimizer is a process automation solution for transportation. As a smart solution, it collects

data on the environmental impact of logistics processes and then uses it as feedback to optimize planning and routing. flexis VRS grows more intelligent over time, providing a transportation process that continuously improves sustainability without intervention. This data also provides visibility to emissions hotspots during transportation, revealing where CO₂ is emitted at the highest levels and frequencies. With this level of transparency, monitoring and reporting on sustainability measures become an integral part of the transportation process. The result is a shrinking carbon footprint, effortless compliance with regulators, and a convenient way to share sustainability progress with stakeholders and regulators.

Green Transportation Transformation



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Becoming a sustainable corporation is more than reporting emissions levels; it's a mindset reflected in a leaner, greener business process that continuously reduces cost and emissions and shares the results with benefactors.

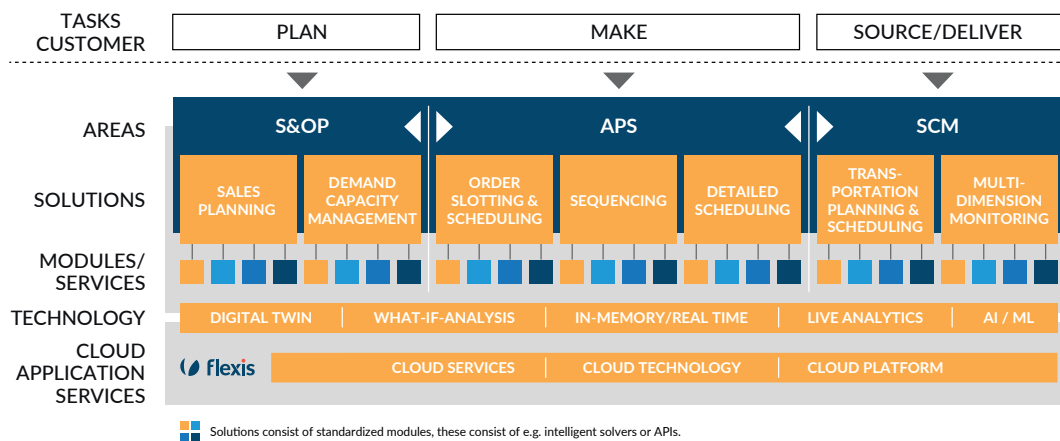
An organization becomes green when everyone involved is committed to sustainability benefits that have personal significance, and this requires public education. flexis Carbon Footprint Optimizer makes all of this more manageable, and it provides an ideal starting point for transportation sustainability. No matter what solution you choose, your company must pursue transportation sustainability now.

TOGETHER ON THE ROAD TO SUCCESS

Best fit for Supply Chain Solutions

About us

flexis AG specializes in flexible information systems for supply chain management. With 25 years of experience in providing standardized software modules, the company offers customized solutions based on secure and proven modules. With seven locations worldwide, flexis AG is globally networked and acts as a close partner and support service provider for over 2,000 satisfied users, even after successful implementation. The focus is always on the customer's continuous improvement process.



Best fit for Supply Chain Solutions

Supply Chain Solutions from flexis are based on the flexis HYBRID Architecture. The modular, customizable solution modules, unique software technology and numerous services enable intelligent ways to optimize processes - for a wide range of industries with national or international networks.

The primary goal is to create real added value together with the customer. flexis maintains long-term and trusting business relationships with customers and partners and contributes to their success with a deep understanding of the processes in different industries.

What we offer:

With our Supply Chain Solutions we are one of the leading providers of integrated SCM (Supply Chain Management Systems), APS (Advanced Planning and Scheduling) and S&OP (Sales & Operations Planning) software solutions. We deliver intelligent integrated planning applications for the automotive, manufacturing and logistics industries.

Our technology allows a fast and convenient implementation of any corporate design in different languages as well as customized visualizations. The flexis basic technology fits on all devices and can be adapted to your own applications or

existing standard software (open interfaces to SAP/ERP). It offers an easy to set up and configure platform, which can be adapted during operation. With the flexis technology, structures and dimensions can be modeled as required.

Contact

With offices in Germany, USA, Canada, China and Japan, we support our customers worldwide during the successful implementation of innovative solutions for supply chain management. For more information about flexis products, visit www.flexis.com.



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